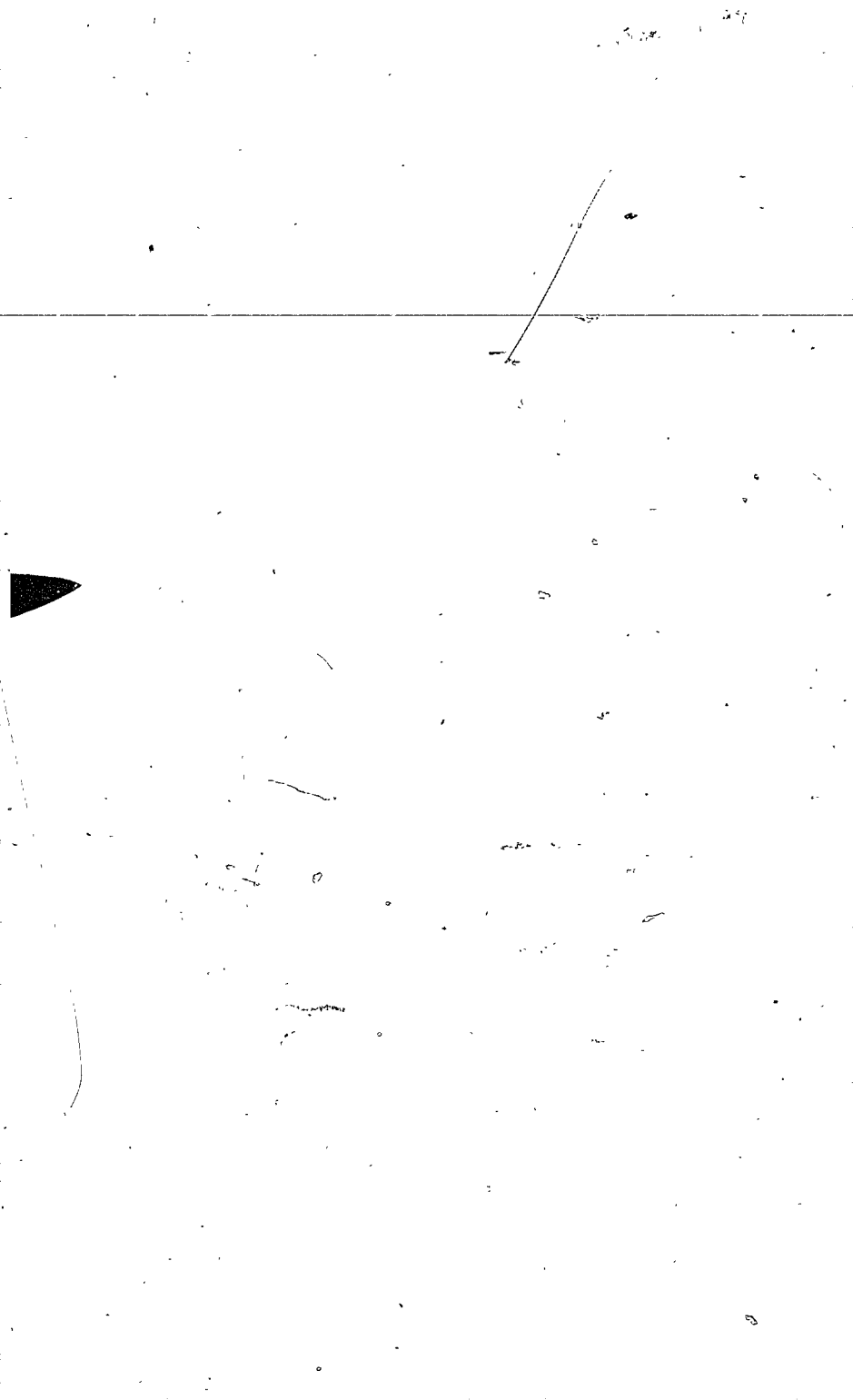


THESE TWENTY-FIVE YEARS





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A SYMPOSIUM

BY

W. H. ALEXANDER

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AND J. M. MACEACHRAN

of the University of Alberta



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FOREWORD

It is now twenty-five years since the University of Alberta opened its doors in a very youthful province in Western Canada. A quarter of a century is a significant period. In many respects the last twenty-five years are unusually significant. Within this period new scientific knowledge has influenced philosophic thought, and new economic conditions have had fundamental sociological consequences. In order fittingly to mark the occasion in the history of the University a series of public lectures was arranged, the purpose of which was to set forth some of the outstanding contributions to thought and to knowledge which have been the gift of the last quarter century. With the exception of the third lecture, to which some additions have been made, the lectures are reproduced in this book practically as they were delivered at the University of Alberta.

Though the treatment is necessarily selective, there is a comprehensiveness in this symposium sufficient to convey to the reader an outline picture of some fields of thought in which university men have been interested, and to which universities have made their contributions, in a period during which a young university has endeavoured to play its part in a pioneer country.

R. C. WALLACE

President of the University of Alberta

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THE HIGHER LEARNING TWENTY-FIVE YEARS OF CONFLICT

BY

PROFESSOR WILLIAM HARDY ALEXANDER

If one could allow himself any degree of expressed dissatisfaction over the assignments to the commemoration lecturers on this twenty-fifth anniversary, I should feel disposed to claim that doubtful privilege for myself. It does not fall to my lot, unfortunately for me and perhaps in the issue infelicitously for my hearers, to describe in this initial lecture the subject which my training and life-work might be considered as best qualifying me to discuss, namely, the trend of development in classical studies during the period under review. I am compelled rather to discuss, not the delightful minutiae of classical scholarship, but, if I am to do my duty, highly controversial and debatable topics. First there is the question of what constitutes the higher learning and what is its proper ideal, and then inevitably the relation of that substance and of that spiritual aim to the agitated life of that world in which the university finds its existence determined to-day. Manifestly this is likely to be a field in which there is room for pronounced differences of opinion; it will also be a field in which these opinions are passionately believed and strenuously maintained. It would be palpably absurd for me to claim that I possess any special immunity from the prevailing epidemic. As a matter of fact I am not enough of an academician not to believe passionately in the things of which I am convinced, nor sufficiently inanimate not to betray my interest in advocating those opinions with such powers as I possess. My sole hope then can be that I shall contrive in these controversial matters to explain my position



with some measure of *humanitas*, that if I may not discuss my special department, I may at least exemplify it.

As for my title, "The Higher Learning: Twenty-Five Years of Conflict", there is no snobbishness implied in the use of the phrase "higher learning". It points to the instruction and the research of the university not as something remote from other learning and alien to it, but rather as constituting the true keystone in the arch of the scheme of general education in any modern civilised state. To be sure, it does not follow by any means that any large proportion of those whom the nation early introduces to the processes of mental training shall ever arrive at that stage designated by the words "higher learning", a point with which I shall subsequently deal; the higher learning is intimately associated with the lower processes, but it is or should be distinguished from them by a highly selective elimination designed to achieve an intellectual government of the best. This is aristocratic, of course, but no error could be more fundamental than that of confusing aristocracy and snobbishness. The true aristocrat, by whatever method determined, is never a snob, and the snob is merely a person unsuccessfully seeking to attain that essential fineness of aristocracy which for ever eludes him.

As there is no snobbishness implied in the first part of my title, so there is no self-deception practised in the second part. There is no use in crying "Peace! Peace!" when there is no peace, no sense in pretending that we are at ease in Zion. The forces of our age in their swift impact upon one another have brought not peace but a sword. The university's environment to-day is not a pleasant and well-ordered society governed by the hypothesis of

God bless the squire and his relations
And keep us in our proper stations,

but a turbulent surge of human struggle in which everything that the past regarded as axiomatic is being called in question.

It is a conflict which exists not simply in the concrete form in which we most frequently conceive it, but far more subtly in every single mind to a degree commensurate with the individual's ability to grasp the extent to which the old is being challenged à outrance by the new in every phase of the social, political, and economic order. Now the university may be at its best not of this world, but it is certainly in it, and because it is in it, it must of necessity pause every once in so often to consider what that fact of being in it implies. That must serve as a justification for the short historical sketch which follows of the view taken at different times by the university as to its function and end, a view which will always be found to bear a close relation to the currents of the general life of man from epoch to epoch.¹

In the Middle Age which, whatever its failings in the eyes of the ultra-modern man, was distinguished for the rise of the universities, this unifying principle for function and end was clearly discerned and resolutely pursued in that *unitas intellectus* within which faith and knowledge are one, a harmony which found its highest revelation in the oneness of God with man. Knowledge was for the most part represented in the speculative faculty of mind, and the goal was truth, which of course in the final analysis was God. So to St Thomas Aquinas the university was the home of speculative thought, and by that speculative thought man and God were to be brought into a perfect unity. Nothing could better give his ideal in this regard, which has always remained the ideal of the Catholic university as we see it explained in John Henry Cardinal Newman's *Idea of a University* for instance, than a sentence of his own which will not, I trust, lose by quotation in the Latin, especially if I am generous

¹ Those who have read Professor Kotschnig's introduction to the series of papers collected in the volume entitled *The University in a Changing World* will have no difficulty in recognising the source of this section of my lecture.



enough to emulate the Loeb library and supply a translation confronting the original:

Intellectus speculativus est qui, quod apprehendit non ordinat ad opus, sed ad solam veritatis considerationem.

The speculative understanding is that which does not apply what it apprehends to practical work but to the sole consideration of the truth.

I do not wish to prejudge before discussing them other ideals which have since appeared, but I shall assume the responsibility of saying, even thus early in this historical sketch, that, making allowance for a certain change of content in the meaning of words which comes inevitably with time, it would be difficult to find anywhere a nobler statement of the highest purpose of a university than those I have just quoted.

The advent of the classical humanism of the renaissance of ancient learning affected this earlier ideal of course and inevitably so; wherever and whenever humanism has flourished, of necessity there has been a strong emphasis placed on the actual performance and the high potentialities of man. Yet it was not thought or found necessary in the age of the classical renaissance to sever God from man; the problem was rather that of maintaining the old *unitas intellectus* by demonstrating that the more widely extended view of man the creature was still conciliable with the existing conception of God the creator, in oneness with whom the man of 1500 might find as successfully as the man of 1300 the principle of a unified idea for the nature of things, seen and unseen alike. Nowhere is this effect of the classical renaissance to maintain the earlier unity more clearly and more beautifully manifested than in the life and work of that brilliant scholar Pico della Mirandola, whose tomb in San Marco in Florence with the noble epitaph by Angelo Poliziano is a sort of Mecca for all who have loved learning.

But humanism is not, I should judge, a soil particularly adapted for the propagation of faith, and the *unitas intellectus* of the thirteenth century passes through the crucible of the

fifteenth to emerge in the eighteenth in a new principle of unity not given to compromise, the principle of reason; "in reason it (the eighteenth century) found both the unity of the world and the way to understand it". Now at this point the experience of the Greek race will stand us in good stead when we see the brilliant and penetrating rationalism of the age of Pericles, as assured of its method and its goal as any period of thought has ever been, living cheek by jowl with the thorough-going utilitarianism of the Peiraeus or "Harbor" party which was wholly concerned with new forms of production and new fields of commerce. It is a situation in which a unification of ideal is difficult of achievement, one in which utility is likely to gain the upper hand over reason though reason in the first instance justifies utility, one in which a Kleon is likely to seem in the end more desirable than a Pericles. Thus in the eighteenth century the scholarly rationalism of humanism was presently employed to justify on "reasonable" grounds things far removed from a genuine philosophy of rationalism; indeed we may come to ourselves with something of a start when we are told that "in the last few decades of the 18th century, very much as at present, we find an abundance of proposals to replace the universities altogether by professional and technical schools".

Time will scarcely permit a detailed consideration of the Romantic protest at the beginning of the nineteenth century against a decadent rationalism confusing the rational and the useful, more particularly as it was only a brief interlude between one period of so-called practicality and another, though practicality was in the later phase to take on a more exalted form and, for a time at least, to be guided by more exalted principles. This much, however, should be said, as it is significant for the treatment of this whole topic; in Romanticism, both in the university ideal and in literature, a new unity was, at least for the time being, effected. Man was no longer to stand off and view Nature in a cold, objective manner, but was to recognise it rather as his *alter ego*. It is a

period which, even though it produces pathetic fallacies filled with a dubious sentimentalism alien to the classic spirit, generates as well warm enthusiasms not devoid of high sentiment, even if skirting close to sentimentality. The *unitas intellectus* is not now that of man observed in God and thus finding a unifying principle, but that of man and nature identified to achieve a new and subtle harmony. It is noted by observers that at this point philosophy returns again to the dominant position in the universities; the *intellectus speculativus* of St. Thomas Aquinas is looking once again "to the sole consideration of the truth", though this truth is imaginatively, and not logically conceived.

In the scientific era which followed and eclipsed Romanticism a new unity was achieved for a time at least; instead of the oneness of man with God, or the oneness of man with nature, the new *unitas intellectus* is the oneness of man with the material universe. "Man is matter, and as such can be explained by the same methods as are used in the natural sciences." There are to be no pre-suppositions; *voraussetzungslose Wissenschaft* has arrived. It will devote itself to factual knowledge, and the possession of factual knowledge will in the end lead us into all truth, being truth itself. "Science", said Thomas Huxley, "means to teach in the strongest manner the great truth embodied in the Christian conception of entire surrender to the will of God. Sit down before the facts as a little child, give up preconceived notions, or you shall learn nothing." This is very beautiful in its conception and very reassuring in its certainty; "have the faith of a little child, look nature straight in the eye, and she will yield you all her mysteries". But, as Mr J. W. Krutch of the New York *Nation* suggests, Huxley did not think that the mysteries were either very numerous or very elusive; "formally, and for the sake of argument, he declared his willingness to know the worst about man and the universe, but he was serenely confident that that worst was not very bad".

I have said, and I believe it to be entirely correct, that science is the objective pursuit of factual knowledge. Yet I think it will be noted by almost anyone who cares to look into the matter at all that the facts which science so laboriously and so painstakingly accumulates require to have two things at least said about them. In the first place there is very little value, philosophically speaking, in facts by themselves; it is in their interpretation that the value lies, and a fact of consequence is rarely self-interpreting. In the second place, neither the facts of science nor the interpretations put on them by science itself give us any better idea of the real purpose of human life, if any, than the speculations of the humanists or even of the theologians; indeed both these latter groups, considering man in his social relations as they are more or less bound to do, are really as a usual thing much more hopeful and much more suggestive than science. No mere collection of facts about the physical envelope of existence advances one iota our idea of what that physical envelope or our life within it is for, of why it came into being and is lived; yet collecting facts, the increase of factual knowledge, is the work of science. The moment it begins to hypothesise, that is, to pass beyond the point of providing general laws for the co-ordination of the single phenomena into generic groups, it becomes metaphysical in its character, as can be readily seen from the speculations of Jearis, Eddington, or Whitehead. At this point of course it passes into philosophy, and the old name "natural philosophy" begins to acquire new significances. And it is worth while observing that, while the facts of science have worked havoc upon certain things which ancient theologies have insisted on regarding as facts, these same facts of science have not explained what life is for.

There has thus naturally been a notable decline in the high spirits which attended the launching of the great scientific quest in the 1850's. Partly, to be sure, this is due to the fact that nothing in life is ever quite up to expectations, and



science has not been exempt from this sad truth of experience. But it is also due to the discovery by the scientists themselves that back of the facts of scientific knowledge as understood some years ago there lie, according to our present information, other facts, behind which still other facts lurk concealed. Thus the consciousness is dawning at last even on the most convinced scientists that the best which science can ever offer is to hound the fact a little farther back. And of course when you arrive at your ultimate point as you surely will, the problem still is: Whence came this last fact, this remotest conclusion, to which the investigation has been pushed? And even if we felt sure that we could solve the riddle of the universe by chasing down the ultimate fact, there would still, I fear, be a just doubt in regard to our being able to do the chasing, because nothing is more certain than the limitation of man's scientific attainments by the capacity of his senses. Factual knowledge is knowledge sensorily apprehended, and the senses have their very definite limits, even though man has been created but a little lower than the angels.

But when the spirit of modern science came into the university, these things were inadequately apprehended, and the fascination of a specious promise of certitude, and quite early certitude besides, proved all-dominant. "Real knowledge is obtained at last, and this means power—power over the world, whose secrets are at last discovered." In this conviction the universities were once again united; they were all following the course which could not fail in the end to lead to truth, the ultimate truth of things as they are. A new unifying influence had been uncovered; the spirit of research is the only real Holy Spirit of humanity. Nor can there be any doubt of the vitalising quality of this new spirit thirty or forty years ago when the older men of the staff of this university were receiving their early training; under its influence the universities of the world once again, for a time at least, became true homes of the higher learning, animated

in this newest field of human endeavour by what the best thought of the world from Plato and Aristotle down has most admired and most praised, *the love of learning for its own sake*.

The importance of science is greatly exaggerated for the mass of mankind through its practical applications in the various wonder-machines of our modern life, every one of which of course depends for its existence, at least in its present form, upon the labour of pure science. To the generality, and even to some who should not be just of the generality, the greatness of science appears to lie in its power to function as a magician creating something out of nothing, or in any event effecting some extraordinary transmutation. I need hardly take the time to point out the danger of this view, first, because science, practically and commercially applied, may not be able to continue to provide show-pieces indefinitely; or at all events, not be able to continue to stimulate an appetite which has become thoroughly jaded by a succession of marvels; second, because science is liable to find herself compelled increasingly to play the showman instead of being the scholar.

And here we confront a very real danger of which I feel in honour bound to speak at some length and with some frankness. For it may be remembered that when a short time since we were discussing the passing of the unifying conception of the university from humanism to rationalism, it was noted how rationalism soon found it hard to preserve her identity separate and independent from that of utility. "To do the reasonable thing"—the phrase is ambiguous; it may mean to act strictly in accordance with reason or it may mean to be accommodating according to the interpretation put upon "reasonable" by the generality. But to them the "reasonable" thing is something that makes for their comfort and convenience, so that the "reasonable" thing for them means the useful thing, in the sense that *they* can use it. Thus, as we have recorded, the end of the eighteenth century saw launched



an abundance of proposals to replace the universities altogether by professional and technical schools. Is our own time so very different if at all? And if it is not very different, is not that condition the outcome of scientific rationalism?

Science therefore, not intentionally to be sure, except in very rare cases, has re-created a set of circumstances in which a large body of persons, wholly enamoured of certain of her practical results, would either make the university purely scientific, or would, like their eighteenth-century predecessors, dispense with the university to establish some sort of glorified trade-school where they could get "results", some new gadget for their automobiles, a new radio tube, or some other automatic buffer against the supposed ills of life. But of course a trade-school, estimable as it may be for its own purposes, can never be a university, nor can a university with no side but a science side escape the danger of sliding, at a pace quickly accelerated, into a sort of select trade-school. Where the balance is destroyed, it will be found that the true university speedily ceases to be. That in the spirit which I have touched on here a real menace exists even to science itself is well recognised by all leading scientists. To illustrate that menacing spirit I may quote the complaint once voiced to me by a prominent surgeon directed against the requirement of physics and chemistry for students of medicine. According to this authority the objection was that the study of these fundamental sciences kept the medical student from getting quite as quickly at the real work of his profession. Physics and chemistry as a matter of fact stood to him in precisely the same light as Latin, History, or English Literature. He thought he was a professional man; he was actually only a high-grade artisan.

But there is of course another way of subtly dealing with this urge for utilitarian "results". Since it feels that professional and technical schools really ought to replace the universities which are, after all, only the late-lingering supporters of a moribund tradition, it might be well to conciliate

it by taking into the university scheme all sorts of technical and professional units. There is hardly any trend more obvious in the university life of to-day. In the case of the state-financed and state-controlled university we may naturally expect a very close reflection of general public opinion which, not feeling quite at home with those abstractions in which the chief glory of the university has always resided, approves schools whose results are concrete enough for it to see, touch, taste, handle, and even smell. Furthermore as that great modern sophist the state has undertaken to teach everybody anything or anybody everything, the question of expense arises, and it seems more economical to have one "plant" than two, irrespective of the congeniality or the contrary of whatever things may in that way be thrown together, for better or for worse, without even the prospect that death may them part. In the case of the privately endowed university the man with the money is, naturally enough, rather partial to the means whereby he made it, and leans yearningly towards a school of this, or a chair of that, where the school or the chair relates itself to his experience. The real question is of course not whether it relates itself to his experience, but to a sound idea of a university. There are the cases to be sure in which an astute and diplomatic university president prevails artfully on such a donor to forget Brewing and to remember Classical Archaeology; the age of miracles is not entirely past. And there is the further consideration that may properly be added here, that the various technical and professional schools like to attach themselves or to be attached to a university, because the term "university" is an historic appellation, honouring with the lustre of years and of a once very exclusive tradition all those who are included under it.

The usual justification for including technical and professional schools in the university is like the explanation that some wives give for their marriages, namely, that they married their husbands to reform them. It is urged that if these schools are included in the university, the tone of these



various technical callings which they represent will be greatly raised to the advantage of all concerned. I do not challenge for a moment the sincerity of many who put this argument forward, but I cannot feel from my own experience, now grown longer than I care at all times to think upon, that the actual results support their contention. A marriage sometimes lifts up, but it often drags down. It is unwise to mix in one group young persons of whom some are pursuing practical and purely utilitarian courses, while others are professing the desire of a liberal culture, because young persons are not able to discern the long-range values of liberal culture as compared with the promise of early profit suggested by technical and professional studies, and those who are engaged in receiving a purely mental training fancy themselves in the immaturity of adolescence inferior to those who are using their fingers.¹ The whole reaction on the higher learning is no doubt extremely unfortunate, all the more so because it is based on totally erroneous conceptions of both education and life. I do not know of any way in which an institution simply by aggregating groups of aspirant technicians under the name university can ever inspire the idea of the Whole in those who are all too obviously interested only in a Part, and I greatly fear that by exhibiting in a rather generous profusion groups who are the servants of a Part, it flatly and directly discourages conscientious seekers of the Whole. That the universities have generally and persistently accepted this pangatherum policy and more so than ever in these twenty-five years is, of course, no evidence of its validity; it is on the contrary more probable that its acceptance merely represents that spirit of accommodation to the current social and eco-

¹ This is not my observation alone. The same note has been sounded from other countries; especially Germany. See, in *The University in a Changing World*, the frank and plain words in Dr Martin Doerne's paper. "If this practical and professional-minded type (of student) gains the upper hand among the students, the existence of the university appears to be seriously menaced" (p. 65).

conomic life of the circumambient world which has been judged by observers in many countries to be the most conspicuous feature of university life in this last quarter century. This accommodation has taken several forms.

One interesting type, already strongly marked in the German universities immediately before the Great War, but developed in all the fullness of an unshamed publicity in post-war days in Russia and Italy, is nationalistic adaptation. In these cases the nation has evolved certain doctrines of state which demand of the citizens with authoritarian severity an all-embracing obedience, and the universities have, no doubt in large part through force of necessity, become in their several microcosms perfect reflections of the macrocosm within which they exist. Nor have there been lacking philosophic attempts on the part of Russian university men to justify the new order in university education in that country, and the fine Italian hand of professors in the home of Fascism appears in many treatises in which the general thesis is maintained, with all the skill that casuistry can confer, that, as Italy has attained the ideal of perfect freedom, so the Italian universities display in all its beauty what intellectual institutions nurtured in this perfect freedom can achieve. The fate of German universities under the iron heel of ruthlessness with which a Hitler will tread upon them belongs in this same paragraph; they will become trade-schools and professional schools on the one hand, or apologists for the régime upon the other.

But I am afraid that the self-righteous satisfaction with which we turn from the spectacle now presented to gods and mortals by the universities of Russia, Italy, and prospectively Germany, thanking God with even more publicity than the Pharisee achieved that we are not as other men, even these foreigners, has in fact little rationality behind it, and perhaps the humble figure and language of the publican might better become us did we only know it. What we reprobate fundamentally in the universities of these countries is not that they

seek to justify the standing order within which they exist, but that the standing order within which they exist happens to be, at least for the time being, distasteful to ourselves. And because that is the case we are unreasonable enough to think poorly of their institutions of higher learning, forgetting that there are other points of view diametrically opposed to our complacency. What we say of them; they say of us; *fabula de te narratur*. Perhaps we had better examine the state of our own house.

In order to be clear as to what we are to undertake in this examination let us remind ourselves that our objection to Russian and Italian universities is based on their subjection to the régime prevailing in those countries. In consequence, should we wish our institutions to make a favourable showing by way of contrast, it would be necessary for us to demonstrate that they are distinguished for their independence of the economic and political world within which they function. I am sure that the moment the nature of the task is outlined, an uneasy feeling must be the portion of all thinking men, especially of those who know with any degree of intimacy the academic world. We are forced in honesty to ask ourselves this question: Leaving Russia, Italy, and the Germany of to-morrow to one side, are the universities of France, Britain, the United States and Canada, dispassionate observers of the standing order or simply appanages and satellites of it? A very disturbing question to those who have any high notions of academic freedom, and somewhat irritating as well to those who, while not sincerely in favour of academic freedom, like to be thought so; their name is Legion, for they are many. However, disturbing or irritating as it may be, this question should be asked and in some manner answered.

Nobody who moves to any extent whatever in the great society which lies outside university walls and engages in any degree in what we may here agree to call the practical functions of the world, can fail to be cognisant that an eco-

conomic struggle of the first order is now well under way. The objects of the struggle are pretty clearly defined and some of the battle areas are well delimited, although it is proving difficult to keep them localised. Every theory rested upon so cheerfully in the past as being a kind of inspired pronouncement by a Holy Spirit of Economics is challenged, and that no longer merely by soap-box orators but by men of birth, intellect, education, and even fortune. The most conservative orators and organs of public opinion are admitting that changes of far-reaching character are impending, and are principally concerned to see that the changes are made, when made they must be, by their immediate friends. The world is full of the sound of preparation for what may easily prove to be the conflict of the ages, the Armageddon of prophecy.

Meantime what of the universities? Let us take the single greatest economic fact of the last fifteen years, the planned economy of the Soviet Republics. If students of our universities are familiar with this fact and its implications, it will hardly be claimed that they have the universities to thank for it, but of course the truth is that only a very small fraction of them are cognisant of its range and significance at all. The attitude of the universities is: *non possumus*; "we cannot touch it". But on educational grounds this is wholly indefensible. It is said that university students are not sufficiently mature to hear detailed discussions of modern economic problems, but at the same time we are offering them courses in literature and history which nobody can possibly understand at twenty because these courses postulate an acquaintance with life which only the advancing years bring. I make bold to say that no one can really understand Sophocles, or Vergil, or Shakespeare, or Browning much under the span of forty years of life. It is impossible to escape the conclusion that nobody thinks it matters very much what conclusions are drawn from courses in literature or history, which, if true, is hardly flattering to the labourers in those academic

vineyards, while, with regard to courses in contemporary economics and sociology not of the orthodox type, it is feared that some students, possibly even the brightest, might cultivate doubts more than merely academic in regard to the standing order. Experience indeed does point painfully in that direction. But of course to avoid the intimate discussion of the great revolutionary changes achieved or probably impending in the economic fabric of the world is after all taking sides in a quite partisan manner, because obviously what a young person never hears criticised, he or she is likely to accept as approved. It is my considered opinion that nearly all the institutions of the higher learning, more especially on this continent, are at the present time guilty of this silent partisanship which cannot however in the ultimate judgment of humanity hope to escape a grave condemnation simply because it has operated negatively. I cannot see then that the universities of France, Britain, the United States and Canada are in the position of being able with any precision of aim to throw stones of any appreciable size at the academic institutions of Italy or Russia. By implication, if not directly, they too are chiefly engaged in supporting valiantly the standing order and the *status quo*. Now if this position had been reached by deliberate conviction, there would be nothing more to say, but it may fairly be suspected that it is due to sheer intellectual inanition and nothing else, unless it be social prejudice and childish economic apprehension.

All that has been said of the economic order and of the universities in relation to it might be repeated in so many words of the universities in regard to the political order. In a time when we are being forced to recognise on every side that our economic actualities and our political institutions are extremely uncomfortable bed-fellows, because the economic situation has developed at a rate somewhat parallel to the amazing increase of machine-power while our political institutions belong principally to the pre-machine period of the eighteenth century, the universities are either positively

teaching the sacrosanctity of these institutions or negatively allowing it to be understood that they partake essentially of the order of the divine government of the universe. For a university teacher to question any of the usual props of the standing political order, even though it be in the general arena of public opinion and not in the class room, is virtual high treason in the eyes of many. But these critics forget, or rather they never knew, that there is a much graver form of treason than that; I refer to the treason to frankness and to his sense of truth of which one may be guilty who has taken those academic vows implied in the words of St Thomas Aquinas already quoted: *Intellectus speculativus est qui, quod apprehendit non ordinat ad opus, sed ad solam veritatis considerationem*. It is often hard for one who has remembered that implicit vow over the years, and for whom it still has significance, to reconcile himself to worshipping with a miscellaneous company in the house of Rimmon.

How extensively these vows are forgotten and under what pressures, one can see quietly and tellingly set forth in Thorstein Veblen's *The Higher Learning in America*, more raucously and popularly in Upton Sinclair's *The Goose Step*. But it should not be thought that it is only America which has developed such a situation and merited such a criticism; the same thesis has been more recently advanced with regard to a country more genuinely jealous on the whole of university freedom than ourselves. M. Julien Benda in his volume *La trahison des clercs* has framed an indictment briefly summed up in the words of Professor Kotschnig's short review of M. Benda's challenge.

(University men)... whose privilege it has been to inherit the sum of the race's knowledge, and to whom has been vouchsafed the inspiration of national, cultural, and spiritual tradition, have abandoned the cause of truth and justice which they were called upon to serve. Trained as they were, partially at least, at the expense of the nation, they have sold their ability, their skill, and knowledge to the forces of self-interest which dominate the world to-day and block the way to a fuller, wider, and

freer life. Greed, the will to power, desire for security and comfort have betrayed those trained to be the *élite* into committing this worst of all treasons. And men begin to ask: Is not the present university responsible for this diversion of talent to base ends? Does it not actually incite to this grand betrayal of the intellectuals by attempting to give a theoretical justification of our present society, and by training men who will serve the present order willingly, asking no questions?

I think that I had better terminate this phase of my lecture by letting those stinging questions seek among yourselves their own answer, or at all events create their due measure of discomfort.

We pass naturally enough to another problem which has come much to the fore in a great deal of university talk since the war, or at all events in talk directed at universities by the eminent recipients of honorary degrees who, in return for their academic distinction, enlighten their benefactors for the space of an hour or so on the duty of institutions of higher learning to form character. This is an interesting thesis, and on its behalf much might be said if what these persons had in mind was the formation of an ideal character, based on the general experience of all humanity over all known time, but of course what they are really thinking of is a character consonant with those features of the national *mores* of which they happen to approve, and that is something very different. They view the university in other words as a possibly valuable prop of the *status quo* if it can succeed in turning out a number of young men and women who will duly qualify for the high places in politics, business, and society, and will fill them according to what would be called relatively to the place where the inspirational message is delivered, the British character, the Canadian character, the American character. In the somewhat acrid words of Professor Kotschnig, "this new university was to furnish the world with good doctors and lawyers and chemists, for Mr Babbitt needed them for his comfort. It was to produce students pledged to the various party programmes, for in

them was truth". Professor Kotschnig means of course the various party programmes which in the different countries are recognised as being socially correct and economically immobile.

The view of the university as a developer of character, by which is meant of course that the university has this aim consciously in mind, has always been accepted in the British universities, especially in the older foundations. Not satisfied that knowledge is virtue according to the Socratic doctrine, they have concerned themselves to make sure that, whatever happened to knowledge, virtue à l'anglaise should be produced. Professor Ernest Barker, of Cambridge University, writing as a contributor to the recent volume *The University in a Changing World*, is conscious of the obvious criticism to which any precise system for the regimentation of student morals when the university stage has been reached, is properly subject. "The tutorial system", he writes, "under which the tutor of a college is concerned not only with his student's intellectual development, but also with his behaviour: the 'proctorial' system, under which the university officers of discipline (in addition to those of the colleges) are concerned with offences against manners and morals—both of these may be said to regard character, and to regard it in a self-defeating way, because instead of letting it grow, they seek to control its growth." Having regard, I would say, to the excellent representatives which the system has always developed relative to the *mores* of the British nation, this typically British view, associated as it is with somewhat dogmatic religious convictions and social prejudices, has been reasonably successful when operating upon those who are already pretty well indoctrinated with the current British ideals, especially those of a certain class, before they reach the university but there are some evidences that in this "brave new world" it is not functioning so happily as in the more slumbrous past, and its effect upon Rhodes Scholars who bring with them an ethos all their own, is usually nil. The

zealous attempts of the Rhodes Trustees to catch their wards younger is good testimony on this point. For myself, were it my task to deal officially with college discipline—*absit omen!*—uninfluenced in this respect as in some others by the implications of the British tradition, I should be inclined to treat men as men and women as women, to assume that university undergraduates are men and women, and to accept a certain very small percentage of wreckage as one of Nature's sad but inevitable functionings. It is better to sacrifice a few who have proved weak in the struggle for self-development, than to labour for the production of a plaster of paris virtue in the whole group—very stiff but equally brittle. And if the university's difficulties in discipline arise from the necessity of treating the undergraduates morally as children, what chance is there of any genuine intellectual work among persons so immature? If they are of the dame's school type in the matter of character formation, of the dame's school type they will be in matters intellectual, and more especially if they continue to be treated as children, however kindly the intention back of it.

It might in fairness perhaps now be asked, seeing that such are my views of the university as it exists in the world to-day, what is my opinion with regard to the future of the university idea. What one may guess about the future depends largely on a realisation of the facts of the past, and in the history of the university idea nothing seems clearer to me than that it has known great variations, that it has stood very high and that it has on the contrary at times fallen very low. I should be disposed to apply to the history of the conception of a university the Spenglerian theory as applied to the whole history of western civilisation, and to say that there has been a fairly steady rhythmic rise and fall in its fortunes viewed relatively to the ideal. If one adopts that graphic view of the history of the idea of a university, I should say that we are at the present on the downward slope into a trough the full depth of which is at present unrealised.

My reasons for thinking that I have for the most part advanced already; the university idea is choked with the supposed obligation of fulfilling a material destiny. As it is likely on the basis of present evidence that this process will advance rather than recede, it seems to me inevitable that the idea for which a university in the best sense stands will be for a time lost sight of more and more. Dr Abraham Flexner's recent book on universities is corroborative of this judgment, even if some measure of discount is applied to both his evidence and his conclusions.

I know that it will be said that the universities began around practical subjects like medicine, law, and theology as well, for theology was intensely practical in those days at all events when its pronouncements for this world and the next were universally regarded as possessing the validity of scientific formulas. "It is true", says Thorstein Veblen, "that, by historical accident, the university at large has grown out of professional training schools—primarily schools for training in theology, secondarily in law and medicine. It is also true, in like wise and in like degree, that modern science and scholarship have grown out of the technology of handicraft and the theological philosophy of the schoolmen."¹ All that I accept, but ask your attention to the fact that science and scholarship have grown *out* of these things, and that by forcing back on the university their modern analogies one is really seeking a reversal of the current of historical development. "The historical argument does not enjoin a return to the beginning of things, but rather an intelligent appreciation of what things are coming to." And of course there is always a case to be made out for inclusion in the university corpus of a school of law or a school of medicine where the interest is primarily and fundamentally scholarly and where the notion of mastering the externalities of law or medicine as a profit-making business does not for a moment enter in.

¹ *The Higher Learning in America*, p. 33.

But we are faced as well, to drag us farther down the curve of the present decline, with the baneful notion that a university education is something that shall be thrown open far more widely than it is even in its present popular extension, and we often hear some regret expressed that of a hundred children starting school only one will ever reach the university. But nobody who merely says that is thereby advancing any proof that the other ninety-nine should be there, and if he is familiar with academic conditions, he will probably entertain his doubts about the one. I tried to make it clear early in this lecture that there is nothing snobbish about the term "higher learning": on the other hand the higher learning should be intensely selective in deciding who are to be the true élite of the state, its intellectuals. It seems to me that it does not matter much for the consideration of this point what your theory of government happens to be; under any government the function of the higher learning must, when properly interpreted, be among other things the prompt rejection of unlikely material and the assiduous cultivation of what remains. And one of the surest ways to kill the higher learning, or in any event greatly to impair its efficiency, is the present method of allowing the student numbers to roll up or even encouraging them, while making no provision for a staff commensurate with this horde of young barbarians, already at play and anxious to continue at it, that flow in upon them. The higher learning can never be successfully propagated under these circumstances because the transmission of scholarly ideals involves skilled teachers working with small groups.

This locust army of students has developed since the Great War in all countries, all because someone put into circulation the idea that what you needed in order to get on in life was education; it was alleged too that in the army the men with the superior education got the commissions. Personally I dispute the evidence, and contend further that if by getting on in life, you mean getting into some profitable business

line, you are not talking of real education at all but only of that sophistic ideal against which Socrates and Plato not unjustly brought all their forces to bear. To make one's living is legitimate, more than that it is desirable, and to get a training for that purpose is commendable, but the university idea has suffered painfully already, and will suffer more painfully yet before we are through from having been drafted into such a service. Dr Doerne's picture of the disastrous effects on the German higher education of a nearly one hundred per cent. increase in the number of university students, so-called, since the war, reflects the discouragement prevailing in his country among those who have at heart the higher learning, and not mass methods in degree production.¹

It may be said that I have never yet made it clear what I consider the object of a university to be; my excuse might well be that it should not be necessary to do so at a university gathering, but I shall not evade the issue even by so good a defence. The object of a university should then, quite frankly, be to fix its eyes upon one thing and one thing only and that is *learning, whether in letters or in sciences, for its own sake*. By learning I mean the patient accumulation of knowledge on the part of staff and students, with the notion of profit-making scotched if it is ever mentioned. I am not to be understood as now maintaining that there is anything wrong in profit-making, but it is a fatal miasma for learning as such, and it is learning as such in which the university is interested, or should be. If it is said that the patient accumulation of factual knowledge puts arts and letters out of the reckoning, I reply that the very finest appreciations of arts and letters in the form of lectures are most frequently based on exact learning, while in the sciences the case is obvious. This pursuit of learning for its own sake implies leisure and quietness, and the modern university, echoing with a thousand noises, hardly can claim to guarantee either. It implies as well no after-thought for the practical or utilitarian consequences of

¹ *The University in a Changing World*, pp. 65-68.

the studies pursued, and most certainly no regard for "the social, civil, or religious temper of the students or the rest of the community". It is not interested in character as such, though it is profoundly impressed with the belief that character comes more surely from devotion to a thing like learning-for-its-own-sake-than-from-any-other-source-what-ever. Possibly no institution ever absolutely conformed to all these qualifications, but assuredly in the past there have been some institutions that have come close to the prize of their high calling, and assuredly there will be such again. And that is why, although it is my personal belief that we are at present descending towards a nadir in the university idea, it is also my expectation that from this nadir a new zenith will ultimately, though not in all likelihood rapidly, be attained once again. It would no doubt have been happier for our own university if it had been founded and passed its first twenty-five years of life on the slope of an upward curve, but we must take things to some extent as we find them, and perhaps it would have been strange beyond explanation if a wisdom had been shown here beyond what passed for wisdom in the world at large.

What would such a university be for? What purpose does it serve in the organisation of society? I would be disposed to reply thus: apart from such contributions as it may incidentally make to the economics of the society in which it is founded, and I emphasise "incidentally", it stands as the living presentment of the love of the truth for its own sake which marks the highest stage attained by man as yet in his moral evolution. To love the truth for its own sake, considering how damaging the truth so often is to our preconceived ideas and our dearest prejudices, how little it makes for repose and how usually it brings not peace but a sword—man has found nothing higher than that, and to that, in its disinterested moments, civilised society occasionally rears a monument in the form of a university, and when the basic conditions for a university's success are respected both

in the foundation and the carrying forward of the foundation's activities, the monument becomes vital and not funereal, the emblem of triumph in the present and hope for the future, not the commemoration of some dead past. Perhaps to some such an idea seems utterly quixotic; they should be gratified with another type of foundation, namely, a great trade-school and professional college, with the love of learning for its own sake quietly dropped as of no significance in a practical world. But there will be others who understand, and know that it is the quixotic things in life that are the most practical often because they mean the most in the end to individuals and peoples. I know nothing more quixotic, measured by ordinary standards, than the morals and economics of the gospels, but there has been a consensus of opinion both among ourselves and the "other sheep not of this fold" that they are the embodiment of the highest wisdom. And those who feel this way should also be gratified with a foundation after their own heart where the love of learning would seem the *only* thing worth while, and the other ends and objects of ambition would speak in accents of some strange and unknown language.

There is more, much more, that might be said, but I am sure you will all feel that at least enough has been said, and some may think that it has been far too much. I have tried to set out the university ideal as it was taught to me, correctly I believe, and as I have always inwardly held to it despite my apparent treasons. I have tried to trace certain changes which historically took place in it and, more particularly, to set forth the damage which I believe it to have suffered not simply from the incidents of the age in which we live but from its very spirit. The genuine university ideal is like the ideal of Christianity in being almost other-worldly, as far removed from the notion of place, profit, and preferment as you can imagine, and both Christianity and the university ideal have been losers always by the intrusion into themselves of alien conceptions fostered by persons who did not really

apprehend the *vis vitalis* of either. I am thus left at the end of twenty-five years of service in this university much chastened in spirit and much disillusioned but not wholly discouraged.

For the university idea cannot fail from the earth unless man decides to surrender his highest idealisms, and revert, earthy as he may be, to a yet more primitive clay. It may suffer its partial eclipses, but it will, I believe, never go out in darkness. As Robinson who founded the first church in Salem wrote of the scriptures: "The Lord hath yet more light and truth to break forth from His word", so I feel confident in asserting that from the conception of the true university mankind has yet the best to anticipate. Viewed at its highest it deals with all that it teaches *sub specie aeternitatis*, and its perpetual and universal motto is surely those words graven on the tomb of John Henry Cardinal Newman, *ex umbris et imaginibus in veritatem*, "out of the shadows of ignorance and the delusive phantoms of phenomena into truth".

ENGLISH POETRY DURING THESE TWENTY-FIVE YEARS

BY

PROFESSOR E. K. BROADUS

The years from October 1908 to August 1914 seem to us now merely a part of an undocumented interval between the Victorian Age, which is history, and the Great War, which began our present discontents. They are forgotten years. The War wiped them out. Let us see if we can recapture them—not in their larger social and political aspects, but in the little field of poetry, which I have chosen as my theme.

The deaths of Swinburne and Meredith in 1909 severed the last living links with the poetry of the Victorian Age. We were all but on the threshold of the Georgian period. But in 1909 we were still Edwardians—which is tantamount to saying left-over Victorians. In that year appeared *Last Poems* by George Meredith and Thomas Hardy's *Time's Laughing Stocks*. Hardy had been writing poems for nearly thirty-five years, but had kept them to himself while he was producing his novels. With *Jude* out of the way, he had produced *Wessex Poems* in 1898 and *Poems of the Past and Present* in 1901. But in 1909, with the appearance of *Time's Laughing Stocks*, we were just beginning to accommodate ourselves to his new rôle. The power of his verse, the vividness of his little rhymed satires of circumstance, his unprecedented bluntness of poetic diction, his strange mastery of uncouth words that to our Victorian minds simply hadn't any business turning up in a poem, were just beginning to impinge upon our consciousness. The literary critics of

1909-10 were asking, though very hesitantly, whether Hardy might not now take Meredith's place as the greatest living English poet.

There were two other poets whose place on Parnassus we were arguing about in 1909. They were as opposite as the poles. One was Rudyard Kipling. The other was Robert Bridges. Kipling had been chanting the British "Regular" and moulding Imperialistic sentiments into swinging rhythms for well nigh twenty years. Elocutionists—and indeed a good many of us who were all too obviously not elocutionists—were still reciting "Gunga Din" and "Mandalay", and in our more serious moments "The Recessional". Kipling was politically representative—but he was not poetically representative. We enjoyed him—but we doubted then, and have since come frankly to disbelieve, that the force, the vividness, the inspired journalism of his verse are enough to make it, in the best sense of the word, poetry.

As for Robert Bridges, he had been long admired by a little coterie for his scholarship, for his ingenious metrical experiments, for his classical dramas, and for the delicate charm of his lyrical verse. He was still a cult in 1909. Most of us, when we thought of him at all, were content to find in his love of the English scene a handing-on of the Tennysonian tradition. His intrinsic value, the contrast between his choiceness and Tennyson's ornateness, we were only just beginning to realise.

We were, most of us, still fairly orthodox Victorians in 1909. There had been new impulses, but we were only vaguely responsive to them. In the "Yellow Nineties", Oscar Wilde, George Moore, W. B. Yeats and Arthur Symonds, seeking inspiration in Paris, had sat at the feet of Mallarmé, and had learned from the French symbolists a new aesthetic. New—and yet old. For by a curious concatenation of circumstances, the French symbolist movement had had its inception when Baudelaire discovered the aesthetic theories and the poems of Edgar Allan Poe—those poems so irregular

and so musical, so remote from reality, so impressionistic and so dream-like, so full of lovely symbols and so divinely meaningless. Wilde and Yeats and Arthur Symonds returned to spread the new gospel in England by precept and example. "Art never expresses anything but itself", wrote Wilde, "it has an independent life...and develops purely on its own lines....All bad art comes from returning to Life and Nature, and elevating them into Ideals....As a method, Realism is a complete failure."

Realism in fact was what these poets most sedulously avoided. And no less sedulously did they avoid the Tennysonian moralising, the Tennysonian descriptiveness, the Tennysonian elaboration. They were ultra-Romantics, exploiting their own souls, conveying their moods and emotions by suggestion, intimating but never explaining, expressing themselves by symbols which the reader was left to interpret. As each poet invented his own symbols, this was often a little hard on the reader. They had sat at the feet of Mallarmé, but they need not have gone out of England. They were trying to do what William Blake had done in the eighteenth century. They themselves did not ignore that. It is not without significance that the motto of Yeats's *Land of Heart's Desire* is a phrase from Blake.

Symbolism was ultimately to have a marked influence, but in 1909 what the Symbolists were doing still seemed rather fantastic to our Victorian minds. However, we had it indirectly in William Butler Yeats. Yeats's *Collected Works* in eight volumes were published in 1908. His *Wind Among the Reeds* was pure symbolism. *The Land of Heart's Desire* was full of implicit meanings and eerie suggestions. But to most of us, Yeats meant, not French symbolism, but pure Irish. We were in the throes of the Celtic Revival. Matthew Arnold's essay *On the Study of Celtic Literature* had left such a lasting impression on us that we were ready to believe that poetry might at any time, by a resurgence of the Celtic spirit, suffer a sea-change into something rich and strange. In that period

of 1909, we yielded completely to the spell of Yeats's verse—its music, its imagery, its *naïveté* (perhaps, as we reconsider it, its rather calculated *naïveté*).

We were excited, too, over the possibilities of the Irish theatre. The "National Literary Society" had been founded in Dublin in 1892, and the "Abbey Theatre" began its performances in 1904. J. M. Synge, whose *Riders to the Sea* cast over us its mystic spell, believed that Ireland was about to produce the world's great dramas. The other nations, over-intellectualised, had lost their creative power; but Ireland was still primitive enough to be creative. "For a few years more", he said, "we Irish have a popular imagination that is fiery and magnificent and tender." But Synge died in 1909, cut short in his thirty-eighth year. Yeats had no real aptitude for the drama. Already, in 1909-14, the Celtic revival seemed to us to be thinning out. And even Yeats's exquisite lyricism seemed a little too much "the stuff that dreams are made on" to be lasting.

With these things in mind, think back with me to that brief period from the beginning of the university to the date of King Edward's death in May of 1910—that period in which we were still Edwardians. Let me gather the threads. Kipling, we discounted. The Irish movement fascinated us, but still we doubted it. Hardy, with his strange, blunt ways, was just beginning to knock at the doors of our consciousness. Bridges, we had hardly waked up to. We were, as I have said, still in the main, Victorians—still assiduously studying and giving university courses in Tennyson and Browning. But it was Victorianism with a difference. The various impacts upon our consciousness—impacts which registered sub-consciously between Queen Victoria's death in 1901 and King Edward's death in 1910—made us restive. Without being distinctly aware of it, we were getting bored with the conventional moralising of Victorian poetry. A letter of C. E. Montagu's, written in 1906, will illustrate our state of mind. "I put in half an hour at the Holman Hunts the

other day", Montague wrote, "and came away aching all over with moral benefit....Holman Hunt could have painted really lovely pictures if he could only have kept from deepening people's spiritual lives....It made me feel as the terrific bits of description in Tennyson do, cast away among all the blamed teaching."

That was the trouble. We were tired of coming away from the reading of poetry "aching all over with moral benefit". But certainly we did not foresee how violently Georgian poetry was to rush to the opposite extreme.

I think that our first inkling of it came with the reading of John Masefield's *The Everlasting Mercy* in 1911. You may be tempted to say that a story, the crude elements of which can be heard any evening in the dim confessional of a Salvation Army gathering on a street-corner—the story of a drunken poacher who gets religion and declaims his spiritual ecstasies all over the landscape—might well make the responsive reader ache with moral benefit. But it didn't. The fact is that even under the first tremendous impact of that poem, we felt a little dubious about the last few pages. Saul Kane became too lyrically, too delicately, too exquisitely religious for a drunken poacher who had sobered off—and Masefield assured us that he *had* sobered off. But all of the preceding part of the poem simply took us by storm. We could read the less respectable stories of Chaucer's *Canterbury Tales* with the discreet enjoyment of students studying a bygone age; but here was a contemporary poet whose hero bluntly characterised himself:

I drunk, I fought, I poached, I whored,
I did despite unto the Lord.
I cursed, 'twould make a man look pale,
And nineteen times I went to jail,

and who thereupon inducted us, in language appropriately brutal, into these whorings and prize-fights and bar-room orgies. It was coarse. It was utterly and preposterously un-Tennysonian. And yet, somehow, because of the sheer



humanity and the lyrical fervour of it, it was poetry. We rubbed our eyes, and wondered. Could poetry be like that—so concrete, so hard, so raw?

We found during the next few years that it could. In those years, the opening years of the Georgian period, developed, with an effect of suddenness, a remarkable poetic activity. Poets grew on every bush, and ways were providentially provided for their getting promptly into print. Harold Monroe established the Poetry Bookshop in London in 1912—a rendezvous for poetical experimenters. In 1913, the Poetry Bookshop issued that now historic little volume *Georgian Poetry, 1911-1912*—the first of a series of current anthologies. In 1912, Harriet Monroe began publishing in Chicago a small but beautifully printed monthly entitled, *Poetry: A Magazine of Verse*, which from the outset opened its doors to the experimenters.

Because that little volume, *Georgian Poetry, 1911-1912*, is long since out of print, I think it worth while to record here the names of the poets represented in it—most of whom were then in the beginnings of a reputation which has been, as such things go, fairly lasting. They were: Lascelles Abercrombie, Gordon Bottomley, Rupert Brooke, G. K. Chesterton, W. H. Davies, Walter de la Mare, John Drinkwater, James Elroy Flecker, W. W. Gibson, D. H. Lawrence, John Masefield, Harold Monroe, T. Sturge Moore, Ronald Ross, E. B. Sargant, James Stephens, and R. C. Trevelyan.

If the Oxford Press should compile, let us say, in 1940, an Oxford Book of Georgian Verse, most of these authors would be represented. It is interesting to catch them here in their beginnings. But though the editor said in the preface that "this collection drawn entirely from the publications of the past two years, may...help the lovers of poetry to realise that we are at the beginning of a 'Georgian Period', which may take rank in due time with the several great poetic ages of the past", it must be admitted that this first Georgian book broke the news rather gently. Only here and

there was a new note struck. The one poem by D. H. Lawrence, "The Snap-Dragon", had a passionate intensity, a sex-feeling only just poetically saving itself from being plain lust, which rang strangely. We were not accustomed to poets letting themselves go like that. There was a splendid, boyish devil-may-care glow in young Rupert Brooke's "Grantchester":

Oh! there the chestnuts, summer through,
Beside the river make for you
A tunnel of green gloom, and sleep
Deeply above; and green and deep
The stream mysterious glides beneath,
Green as a dream and deep as death.
Oh, damn! I know it! and I know
How the May fields all golden show,
And when the day is young and sweet,
Gild gloriously the bare feet
That run to bathe. . . .

Du lieber Gott!

Here am I sweating, sick and hot,
And there the shadowed waters fresh
Lean up to embrace the naked flesh.

There was Lascelles Abercrombie's "The Sale of St Thomas", a poem nobly conceived and nobly executed, describing the way in which Thomas, Christ's apostle, faced the task of going to India to convert the heathen—a poem which deserves to be better remembered by this generation than it is. Lurking within its stately frame were strange franknesses:

And flies! a land of flies! Where the hot soil
Foul with ceaseless decay steams into flies!
So thick they pile themselves in the air above
Their meal of filth, they seem like breathing heaps
Of formless life mounded upon the earth;
And buzzing always like the pipes and strings
Of solemn music made for sorcerers.
I abhor flies,—to see them stare upon me



Out of their little faces of gibbous eyes;
 To feel the dry cool skin of their bodies alight
 Perching upon my lips!

But these were only bits of freshness or of realism imbedded in a mass of fairly conventional poetry. The really new things had only casual representation in that first volume of selections from the Georgian poets. D. H. Lawrence's little volume, *Love Poems and Others*, was published in 1913. One of the most significant of these transition figures is Wilfred Gibson. In 1905 he had published a volume of poems called *The Nets of Love*. Typical of this early volume is the story of a shepherd who leaves his wife and new-born child, to rescue his lambs from the winter-blast. When he returns, he finds his wife dead.

I looked on the still white face, then sank with a cry by the bed
 And knew that the hand of death had stricken my whole joy dead—
 My flock, my world and my heart—with my love at a single blow;
 And I cried "I too will die!" and it seemed that life ebbed low.
 And the shadow of death drew nigh: when I felt the touch on my cheek
 Of a little warm hand out-thrust, and I heard that wail so weak;
 And knowing that not for me yet was there ease from love or strife,
 I caught the babe to my breast and looked in the eyes of life.

That is pure Tennyson—or perhaps Tennyson and water. But between 1907 and 1914 Gibson published a series of poems—dramatic dialogues in verse—episodes in the lives of peasants, fishermen, tenement-dwellers, tramps, steel-workers, furnace-tenders, pit-men—which, in their graphic realism, are as un-Tennysonian as anything could be. I must not burden you with quotation, but here is a bit of dialogue between "Daft Dick" and "the Tramp" when they meet on "Bloody bush Edge":

Dick

There's women folk, and plenty: and they're kind,
 The women folk to me: Daft Dick is ever
 A favourite with the women folk. His belly
 Would oft go empty were it not for them.

Tramp

You call those women—gawky raw-boned creatures,
Thin-lipped, hard-jawed, cold-eyed! I like fat women.
If you could walk just now down the Old Kent Road
And see the plump young girls in furs and feathers,
With saucy black eyes sparkling in the gaslight,
And looking at you, munching oranges,
Or whispering to each other with shrill giggles
As you go by, and nudging one another,
Or standing with a soldier eating winkles,
Grimacing with the vinegar and pepper,
Then laughing so merrily, you almost wish
You were a red-coat too! And the fat old mothers,
Too old for feathers and follies, with their tight
Nigh bursting bodices and their double chins,
They're homely, motherly, and comfortable
And do a man's eyes good: there's not a sight
In all the world that's half so rare to see
As a fat old wife with jellied eels and porter.

Here were poets—and Gibson is typical—who were unconsciously in training for the realism which was to characterise war-poetry in the middle-stage of the Great War.

The middle stage, yes, but not the beginning. At the beginning, our heads were full of romantic ideals. To-day, as we look back, the enduring honour of the men of 1914 is that they recognised a duty to the state, and soberly and conscientiously performed it. But the hardly won sanity of these late days does not diminish—nay, rather, adds to—the poignancy of Rupert Brooke's imperishable sonnet—

If I should die, think only this of me:
That there's some corner of a foreign field
That is for ever England.

They wrote like that—these war-poets—under that first magnificent, rapturous impulse. They thanked God, who had

“matched them with his hour
And caught their youth, and wakened them from sleeping.”

Daunted by the sordidness and pettiness of common life, they "found release", as "swimmers into cleanness leaping", in the thrill of war.

But that first phase was all too soon over. A "body of England's", that had been Rupert Brooke, became dust in Scyros in the Aegean. The poet-fighters who survived, began, because they could not help it, to tell the plain truth. I return to Wilfred Gibson, whose successive transitions are typical.

The Bayonet

This bloody steel
Has killed a man.
I heard him squeal
As on I ran.

He watched me come
With wagging head.
I pressed it home,
And he was dead.

Though clean and clear
I've wiped the steel,
I still can hear
That dying squeal.

Or Siegfried Sassoon's description of a trench:

The place was rotten with dead; green clumsy legs
High-booted, sprawled and grovelled along the saps;
And trunks, face downward in the sucking mud,
Wallowed like trodden sand-bags loosely filled;
And naked sodden buttocks, mats of hair,
Bulged, clotted heads, slept in the plastering slime.

Grim and bitter—this disillusioned war-poetry; but to us who read it now, the most striking fact is that the bitterness was never against the enemy. It was the civilians, the non-combatants, who sang the hymns of hate. It was a comfortable Bishop of the Church of England, who, in 1914, announced, as with the very voice of God, that every man

who killed a German was doing a Christian act. Most of us to-day have pretty well got over the notion that a German is, or ever was, a devil incarnate. But in the late years of the war, long before the rest of us had begun to recover our sanity, the men in the trenches had recovered theirs, and the poets among them distilled it into verse.

When you are standing at your hero's grave
Or near some homeless village where he died,
Remember, through your heart's rekindling pride
The German soldiers who were loyal and brave.

Men fought like brutes; and hideous things were done:
And you have nourished hatred, harsh and blind.
But in that Golgotha perhaps you'll find
The mothers of the men who killed your son.

In the war-poetry of 1918 is no hatred; but it is haunted
by the wraiths of the dead.

They know not the green leaves;
In whose earth-haunting dream
Dimly the forest heaves
And voiceless goes the stream.
Strangely they seek a place
In love's night-memoried hall;
Peering from face to face,
Until some heart shall call
And keep them, for a breath,
Half-mortal... (*Hark to the rain!*)
They are dead... (*O hear how death
Gropes on the shutter'd pane!*)

Meanwhile, the civilian poets, not confronted with the grim realities of the trenches, were indulging in experiments so radical that they put the early Georgians in the shade. Free verse (*vers libre*) and Imagism (*poésie des Imagistes*) had come hand in hand from France to shatter the conventions of English poetry. Free verse, with one magnificent gesture, discarded rhyme and fixed rhythms and regularity of line-

length; and substituted lines which might be six syllables or sixty, and which took their rhythm from the moment's impulse. But the irregular line was only a unit in a larger whole. The fundamental concept was, not the line, but the paragraph, with its rhythmical "return". The immediate effect of this emancipation was absurd beyond belief. Poets, poetasters, near-poets, and would-be poets vied with one another in producing concatenations of words which paraded under the sacred name of poesy; and magazines, anxious to be "up-to-the-minute", printed them. A magazine called *Coterie*, appropriately produced at "The Bomb Shop", Charing Cross Road, London, published a poem containing the lines:

His limbs
Dangle
Like marionettes
Over

a

mauve

Sea,

in which the words "over a mauve sea" present a typographical visualisation of the dangling limbs. (I find in my files for that period an article clipped from the *Manchester Guardian*, signed "C.E.M." (unmistakeably C. E. Montague), entitled "Poetry in the Rough", a priceless satire on the *Coterie* poem; and a solemn rejoinder from the editor of *Coterie*, in which he reminds the *Manchester Guardian* that "originality is ever the black sheep of the human family". I find also in those files a quotation from Carl Sandburg,

Who most loves danger? Who most loves
wings? Who somersaults for God's
sake in the name of wing-power in
the sun and blue on an April Thursday?

and, underneath, the notation: "Mem. To write an essay on free verse, entitled "'The Muse in Motley or Somersaults for

God's Sake'." Much of this free verse, to borrow a phrase from Pope, was

fustian so sublimely bad,
It was not poetry, but prose run mad;

but among the experimenters were genuine poets—Ezra Pound, Richard Aldington, J. G. Fletcher, F. S. Flint, "H. D.", and Amy Lowell. Despite their extravagances, the free-verse writers were opening new ground. Who has ever really defined poetry? Who can say where prose stops and poetry begins? Is Sir Philip Sidney's *Arcadia* prose or poetry? Is Sir Thomas Browne's *Urn-Burial* prose or poetry? Is Ruskin's description of St Mark's prose or poetry? These free-verse writers were experimenting with the dividing line. Only the most crusted die-hard would deny that these unrhymed irregular lines of John Gould Fletcher's, with their exquisite "return", are poetry.

You who flutter and quiver
An instant
Just beyond my apprehension;
Lady,
I will find the white orchid for you,
If you will but give me
One smile between those wayward drifts of hair.
I will break the wild berries that loop themselves
over the marsh-pool,
For your sake,
And the long green canes that swish against each other,
I will break, to set in your hands,
For there is no wonder like to you,
You who flutter and quiver
An instant
Just beyond my apprehension.

I have said that free verse and imagism came hand in hand. The Imagists were addicted to free verse, but were not antipathetic to conventional metres. It was not the mould but

the content of poetry with which they were primarily concerned. Their problem was to quintessentialise. They were trying to do in a different way what the symbolists had been trying to do in the 1890's. The symbolists of the '90's, had sought to distil the essence of a poetic idea into a symbol—into something which would create an aura of suggestion. It might be dim and shadowy and other-worldly. It was, as I have said, open to the objection that each poet invented his own symbol and left the reader to guess what it symbolised. The Imagists were seeking, not a symbol, but an exact, image-creating word. The word might be poetical (in the conventional sense), or it might not. Frequently it was not. Often, the Imagists allowed themselves to be deceived into thinking that an unusual, unconventional word was precise and image-creating, merely because it *was* unusual and unconventional. When, for example, Amy Lowell begins her description of the springtime advent of the purple grackles—

The grackles have come.

The smoothness of the morning is puckered with their incessant chatter, the reader is halted, rather than stimulated, by the image. John Donne at his worst came to life again in some of the conceits of these twentieth-century Imagists. Some of them, one suspects, were actuated more by a fear of conventionality than by a passion for exactitude. Certainly the critics bred in the Imagist school fostered that state of mind. If an Imagist poem harboured a single *cliché*, or invoked by so much as a passing allusion what the critics called the "rusty machinery" of poetical tradition, the poem was damned.

But if there was pretence and confusion, there was also much that was good. John Gould Fletcher's "Blue Symphony" is an admirable example of sustained imagism, but is much too long to quote here, and would suffer in an excerpt. Consider instead this short poem of Richard Aldington's, from the volume entitled *Images* (1919). It is a variation on an old theme—the turmoil of the sea as a symbol

of man's perturbed spirit. Sophocles, as Matthew Arnold reminds us,

long ago

Heard it on the Aegean, and it brought
Into his mind the turbid ebb and flow
Of human misery.

To Arnold, it became the "melancholy long withdrawing roar" of the sea of faith. Aldington calls his variation of the theme "Inarticulate Grief". I cite the poem primarily because it illustrates in brief compass the sharpness of definition, the "hard, clear, exact words" which were always the goal—or at least the professed goal—of the Imagists' ambition; but you may also be interested, at your leisure, in re-reading "Dover Beach" side by side with it, and observing the contrast between Arnold's expatiations and the succinctness of these lines—

Let the sea beat its thin torn hands
In anguish against the shore;
Let it moan
Between headland and cliff;
Let the sea shriek out its agony
Across waste sands and marshes,
And clutch great ships,
Tearing them plate from steel plate
In reckless anger;
Let it break the white bulwarks
Of harbor and city;
Let it sob and scream and laugh
In a sharp fury,
With white salt tears
Wet on its writhen face;
Ah! let the sea still be mad
And crash in madness among the shaking rocks—
For the sea is the cry of our sorrow.

Meanwhile, it had dawned on these quintessentialists that Chinese and Japanese poets had been quintessentialising for something like twelve hundred years. Japanese poets, taking

their cue from the Chinese, had gone on working at the problem during that unimaginable lapse of time which makes a thousand years but as one day in Oriental retrospect. In the seventeenth century, the Japanese poet, Bashō, had perfected the hokku. The hokku consisted of three lines of verse comprising, in all, precisely seventeen syllables. Within this Procrustean bed of three lines totalling seventeen syllables, the poet must convey a mood or create a picture. Since the seventeenth century, the Japanese poets had practised the hokku, and even when they were not confining themselves within this exigent limit, were trying to confine their poetry to an irreducible minimum of image-words. The hokku was Japanese, but the Chinese poets likewise were striving for the irreducible minimum. About 1920 (I do not recall the exact date), Arthur Waley, an official of the British Museum Library, published a series of careful free-verse translations of Chinese verse. Here is one of them—a picture of the coming of night: Bear in mind that the connective-words are largely inserted by the translator:—

Water's color at dusk still white;
 Sunset's glow in the dark gradually nil.
 Windy lotus shakes (like) broken fan;
 Wave-moon stirs (like) string of jewels.
 Crickets, chirping answer one another;
 Mandarin ducks sleep not alone.
 Little servant repeatedly announces night;
 Returning steps still hesitate.

In America, Amy Lowell and John Gould Fletcher were experimenting with translations or paraphrases of the hokku. Here is one of Fletcher's. It is called "The Traitor". Note first the effectiveness of the image and then the sudden upwelling of passionate hatred.

I saw him pass at twilight;
 He was a dark cloud travelling
 Over palace roofs
 With one claw drooping.

In his face were written ages
Of patient treachery
And the knowledge of his hour.

One dainty thrust, no more
Than this, he needs.

I have dwelt upon these experiments, because they seem to me genuinely significant. As from the vantage point of 1933, we look back over the Imagist Anthologies of 1914, 1915, 1916, 1917, and 1930, we may venture the opinion that not one of the poets represented in them will be remembered beyond the present generation. Most of them are half forgotten already. The 1930 Imagist Anthology is probably their swan-song. But in trying to emancipate poetry from the thralldom of fixed metres, and in discarding verbal elaboration in favour of the quintessential image, the free-verse writers, the Imagists, and the Orientalists were doing yeoman service in a good cause. For it is probable that the great poetry of the future will be both more concentrated and more unfettered than poetry has been in the past.

But the Imagists seem tame in comparison with some of the other experimenters. As we look back over the war-years and the 1920's, our first impression is one of sheer delirium. It is a sort of Jazz Age of poetry. The poets formed schools within schools, and, borrowing the nomenclature of the artists, called themselves Cubists, Futurists, Vorticists and what not. Ford Madox Ford, writing a preface to the 1930 Imagist Anthology, and looking back over these early spasms, says: "What exactly Vorticism was—though I was its most loyal champion—I never knew". Probably a good many of the exponents of those schools were in the same case. Like the men of Athens, they "spent their time in nothing else but either to tell or to hear some new thing". But from this welter, a few bold and technically skilful experimenters stand out. Notable among these are Edith

Sitwell and T. S. Eliot. In 1916 Edith Sitwell started a yearly publication: *Wheels: an Annual Anthology of Modern Verse*, issued in covers decorated with red and green wheels and Cubist cloud-bursts. In "Wheels", she sponsored some very giddy spinnings; but Edith Sitwell herself is no "jazz-artist". She is, in fact, an unconventionally-minded intellectual, a profound student of the poetical technique of the past. She is an especial admirer of Alexander Pope, applauds his clarity and exactness, and has recently published a critical estimate of him which, in spite of its lack of balance, no student of eighteenth-century poetry can afford to neglect. But her admiration for Pope's clarity and formal regularity has not prevented her from attempting to do things with verse which would make Alexander Pope turn over in his grave. Her most curious poems are, to use her own words, "studies in the effect that texture has on rhythm, and the effect that varying and elaborate patterns of rhymes and of assonances and dissonances have upon rhythm".

In Edith Sitwell's *Collected Poems*, 1930, you will find these experiments in rhythmic patterns, chiefly in the section entitled "Façade", and in the songs in the section entitled "Prelude to a Fairy Tale". In the latter group are a number of songs intended to reproduce in verbal rhythms the rhythms of various dances—the Polka, the Mazurka, the Waltz. These efforts to reproduce dance-rhythms in word-rhythms will probably interest you most; but I shall not pause to quote. In fact, to quote a mere excerpt from one of these arrangements of image-words, or connotative words, in reproductive rhythms, would do Edith Sitwell injustice. It might sound merely silly to you. I confess that even taken in the large a good deal of it sounds just a little silly to me. I am reminded of the remark of Owen Wister's Virginian when he was convalescing from a bullet-wound, and was apologising for going to sleep while the New England School-teacher was reading Jane Austen aloud to him: "If you could just read me something that was *about* something,

I could keep awake." I am still old-fashioned enough to think of a poem as primarily rational—as expressing a mood, or creating a picture, or telling a story. I am still old-fashioned enough to think of verbal harmonies as means to that end. But I do not think, and I should be sorry to have you think, that such studies of poetic rhythms in the abstract, so to speak, are time wasted. Nor would I wish to leave with you the impression that Edith Sitwell's poetry is merely fantastic. No modern poet can tell a story with more directness, vividness and dramatic power. Read, if you will, the "Four Elegies" in the *Collected Poems*.

T. S. Eliot is an American by birth, educated at Harvard, Oxford and the Sorbonne. He lives in England, edits "The New Criterion", and is recognised as one of the most scholarly and one of the most acute of literary critics. His collected Essays, recently published, reveal an extraordinary range of learning, in the classics, in Elizabethan drama, in seventeenth-century English literature, in Italian and French literature. I have noted this because I wish to emphasise the fact that some of the most radical experimenters in poetical technique, some of the poets who have produced the strangest, the most subversive, the most fantastic poetry, have been, not mere poetasters or *poseurs*, but men and women of trained minds, profound learning, and absolute sincerity.

Eliot's poems are, primarily, a criticism of present-day life, an exposure of its futility. He makes his points, not by satirical elaboration, but by capturing a whole aspect in a single phrase, so sudden, so abrupt, so vivid and so biting that, in the language of Sairey Gamp, it fair gives you a turn. There is that devastating satire on the emptiness and futility of this generation, called "The Hollow Men", in which Scripture phrases beloved of the orthodox are interlarded between glimpses of pettiness and ironic echoes of old philosophies—that satire which culminates in a phrase that distils the very essence of whining supineness. I quote only the

closing stanzas, in which the children's song: "Here we go round the mulberry bush" gives the cue:—

Here we go round the prickly pear
Prickly pear prickly pear
Here we go round the prickly pear
At five o'clock in the morning.

Between the idea
And the reality
Between the motion
And the act
Falls the Shadow
For Thine is the Kingdom

Between the conception
And the creation
Between the emotion
And the response
Falls the Shadow
Life is very long

Between the desire
And the spasm
Between the potency
And the existence
Between the essence
And the descent
Falls the Shadow
For thine is the Kingdom

For Thine is
Life is
For Thine is the

This is the way the world ends
This is the way the world ends
This is the way the world ends
Not with a bang but a whimper.

There is "The Love Song of J. Alfred Prufrock", introduced by a quotation from Dante's *Inferno*—a passage in which the

soul of Guido da Montefeltro consents to tell the plain truth about himself "without fear of infamy" because he knows that from that place of punishment he can never return to the world of the living. Not otherwise, surely, could the soul of J. Alfred Prufrock, the typical modern man of the world, have so completely exposed its own futility—Mr Prufrock who has "measured out his life with coffee-spoons"; whose elderly gentility is concerned with the decision to "wear the bottoms of his trousers rolled"; and who, finding it "impossible to say just what he means", does not "dare to disturb the universe".

There is that devastating consideration of elemental instincts *versus* the Christian religion, called "The Hippopotamus". There is "The Waste Land", which has so exercised the ingenuity of critics bent on discovering symbolic significances, that Mr Eliot himself has been driven to protest that they are reading into the poem more than he ever meant or knew. The little sheaf of T. S. Eliot's *Poems—1909–1925*, which numbers only 99 pages of large print, has occasioned more controversy than any other equally small sheaf of which I know—unless it be that historic first edition of Wordsworth's and Coleridge's *Lyrical Ballads*.

One thing more must needs be said about Eliot's poems—a matter, not controversial, but interesting to every student of poetic art. All poetry is allusive. The Elizabethan poets filled their plays and poems with allusions to, and analogies from, the classics of Greece and Rome, because in that first flush of the Renaissance, the classics were the very breath of life to them. The early eighteenth-century poets filled their verse with classical catch-words because the Classics were the fashion. But Eliot has developed a new art of allusiveness—a deliberate and systematic use of phrases from past writers. These phrases are not set off by quotation marks in the poem, but are scrupulously identified in footnotes. If the reader has a well-stocked mind, these phrases, subtly interwoven, impart a faintly reminiscent flavour, and at the

same time arrest the attention by their ironic application to the conditions of to-day. This process is never a mere display of erudition on Mr Eliot's part. It is a deliberate psychological experiment—yet another, of the experiments so prevalent in these last twenty-five years, in the exploration of new possibilities in the technique of English poetry. And since Eliot is modern of the moderns, this would seem to be a proper moment to gather up the threads that we have so far been disparately tracing, and see where we are.

I remind you that our survey began when we were just ceasing to be Edwardians and were just discovering that, as Georgians, we were something different. Back of us was the first anti-Victorian reaction of the Yellow Nineties. Just back of us was the Irish Movement, the Celtic revival. Beginning to impinge upon our consciousness was the possible greatness as poets of Thomas Hardy and Robert Bridges. Immediately confronting us was the new poetic era of the Georgians—the fervid realism of Masfield, the plain realism of such poets as W. W. Gibson, the rather mild anti-Tennysonianism of the anthology called *Georgian Poetry, 1911-1912*. Then came the reflex of the War, and, coincident with it and following upon it, a period of remarkably radical experimentation in poetical technique. What, meanwhile, has happened to that pioneer group of poets, comprising the *Georgian Anthology, 1911-1912*? Despite the vividness of some of Rupert Brooke's early poems, such as "Grantchester" and "The Fish", he would probably be forgotten ere now, if it had not been for the enduring impression of the "1914 Sonnets". Masfield's reputation, definitely fading after the first big splash, has been factitiously and momentarily revived by his appointment to the Laureateship in 1930. Drinkwater has continued to be facile, voluminous, and second rate. Flecker, with the exotic beauty of "Hassan", became the poet of a day. The reputation of de la Mare has not only survived but been enhanced as the most delicate and exquisite of the minor poets. Gibson, Abercrombie and Davies

are lasting well, but will probably not outlast the present generation. After this lapse of years, D. H. Lawrence persists as the most impressive figure, of the group represented in their beginnings in the *Georgian Anthology, 1911-1912*.

Impressive, not, it seems to me, because of his technical skill—though here and there, both in his rhymed and his unrhymed poems, he is very skilful; impressive rather because he has in his poems as in his novels the power, unequalled by any other recent writer, of recording—and perhaps making his reader share—a peculiar intensity of sensuous—and generally sensual—emotion. The question of the ultimate value of this, I am disposed to leave to the Freudian psychologists. My own impression is, for whatever it may be worth, that D. H. Lawrence's poetry definitely, as the phrase is, *dates*; that the Freudian psychology is an inordinately exaggerated, passing fad; and that most of D. H. Lawrence's poetry will expire with it.

Bridges and Hardy await us. The fly-leaf of *The Georgian Anthology, 1911-1912*, printed in 1913, bore the words: "Dedicated to Robert Bridges by the Writers and the Editor". In that same year, Premier Asquith appointed Bridges to the Laureateship. From then till his death in 1930 Bridges conferred honour upon an office which a good many of his predecessors in it had belittled. Always a delicate and exquisite artist, though never, I think, possessed of the emotional energy which has characterised the greatest poets, Bridges has written a few lyrics which the world will not willingly let die.

"The Testament of Beauty" is still too fresh in our minds to need more than passing comment. It contains the accumulated wisdom of a great and noble old age. When it appeared, it was hailed by excited critics as one of the major poems of English literature. Already, the reaction has set in. In this saner retrospect, it is recognised as an interesting and stimulating contribution to philosophical aesthetics, with a

few passages of rare poetic beauty, but much dull verbiage in between.

Once every thirty-three years or so, the earth comes into contact with the Leonids—those fragments of disintegrated comets which dart through the midnight sky and disappear. Meanwhile, in the constellation Leo, the fixed star Regulus, which imaginative astronomers have dubbed *Cor Leonis*, Lion's Heart, casts its steady beam. Since the beginning of the twentieth century, for these thirty-three years, the Leonids of poetry have flashed and spent themselves. But Thomas Hardy has been the fixed star, the *Cor Leonis*, among these evanescent apparitions. When Hardy's *Collected Poems* appeared in 1919, Richard Aldington, himself a poet, wrote: "Hardy is perhaps the only great poet now writing in English. He makes most contemporary poets look like pygmies". That was an honest verdict. Save, alas, that Hardy is no longer "now writing", that verdict stands to-day.

We have been concerned with technical experimentation. Has the mood of poetry, the "approach", changed perceptibly in these twenty-five years? I think it has. Do you remember that poem of Ernest Dowson's, so famous in the 1890's—"I have been faithful to thee, Cynara, in my fashion"—that poem of jaded passions and the ashes of dead loves? Poets are not writing like that any more. The change has been admirably summarised by Archibald MacLeish, author of *Conquistador*: "Poetry in our time has moved towards the outside world. I do not mean that it has become 'objective'. I mean that it has lost its long preoccupation with the poet's emotions and the poet's genius—its sickroom smell. It is concerned with the life of man in the earth—of men in the earth—of the generations of men. Its vitality is of the blood rather than the nerves. Its life is in the senses, the hands, the tongue, rather than the brain. Its compulsions are the compulsions of human fate rather than the whimsies of the soul. And these characteristics of poetry are a reflection of the characteristics of the time, for poetry, however the socio-

logues may ignore it, is a more accurate mirror of its time than any other art or than any other human expression."

I think that these are true words. They leave room for the physical probings of D. H. Lawrence at one end of the scale, and for Hardy's calm detached studies of human circumstance, *sub specie aeternitatis*, at the other. But I confess that I return from steeping myself in these moderns, to Thomas Hardy, with an inexpressible relief. We have created a Frankenstein monster. We call it "the present organisation of society". The little poets are barking at its heels. But Hardy seems to me to transcend these passing phases, and to estimate life, not only with an ironic understanding, but with a magnificent patience—

A star looks down at me,
And says: "Here I and you
Stand, each in our degree:
What do you mean to do—
Mean to do?"

I say: "For all I know,
Wait, and let Time go by,
Till my change come."—"Just so,"
The star says: "So mean I:—
So mean I."

CONCEPTS OF THE LIVING AND THE NON-LIVING WORLD

BY

PROFESSOR F. J. LEWIS

So varied and fundamental has been the change in outlook on living and non-living matter that it is in a short lecture only possible to examine some of the newer concepts in a few of the fields. New aspects and knowledge of the history of the earth, the shape, extent and structure of our Universe of Stars and of other Universes lying far beyond, and of the ultimate structure of matter and of the vast number of organisms composing the great river of life, flowing through the ages, have come about over the space of twenty-five years, so that hardly any of the conceptions of the 1890's can now carry weight. The outlook of modern science is very different to the outlook even in 1910 and as the field of knowledge has extended the ultimate problems appear to be more difficult and some appear to be insoluble. Man has become more and more aware of the strangeness and the greatness of the stage on which he plays his part.

The outcome in the shape of practical application is obvious to us in the present day in the shape of many conveniences of modern life that we quickly regard as essential, and it is interesting to reflect that many of these have come about within an average human lifetime. They are some of the playthings and conveniences produced by science for the use of mankind, so familiar that we hardly think of civilised life without them, yet all discovered, developed and applied on a gigantic scale within the lifetime of one man. The list

might be multiplied, and ever fresh developments are taking place—world wide communication by radio for instance is a story of less than one decade. Except for the last, all these things were scientific developments of the last century. I use this term advisedly because a scientific development is a different thing to a scientific discovery and behind all these developments stood discovery in pure science often carried out by a different type of mind and in a different sort of spirit. They were the fruits of a physics and chemistry which had no inkling of the modern conception of matter as it stands to-day.

It was the last decade of the nineteenth century which saw the beginning of the great renaissance in the study of the constitution of matter and the structure of the Universe. Until quite recently atoms were regarded as the permanent units of which all matter is built. All changes of matter in the universe were regarded as nothing more drastic than rearrangement of permanent indestructible atoms. The story of the last twenty-five years is the shattering of this conception.

It was towards the end of the last century, that Crookes, Lenard and J. J. Thomson first began to break up the atom, and the structures which had been believed for 2000 years to be unbreakable were shown to be susceptible to fragmentation. These fragments were shown by J. J. Thomson in 1895 to be identical, no matter what type of atom they came from—they were of equal weight and carried equal charges of negative electricity and were hence called electrons. The atom, however, cannot be built up of electrons alone for as each electron carries a negative charge of electricity a structure consisting of electrons alone would also carry a negative charge. Observation shows that a complete atom carries no charge, so that somewhere in the atom there must be a positive charge of electricity just sufficient to neutralise the combined negative charge of all the electrons.

Dr (now Lord) Rutherford in 1911 first revealed the archi-



ture of the atom. The key to the problem proved to be the radio-activity of uranium. The atoms of this substance were so far from being permanent and indestructible that their very nuclei crumbled away with the lapse of time so that finally the nucleus of an uranium atom becomes the nucleus of a lead atom. The transformation proceeds gradually and by stages which no external conditions will cause to vary.

In general all the samples of rocks the age of which have been measured by this method are found to put the time since the earth solidified at fourteen hundred million years. The modern conception of the structure of the atom the foundation of which was laid by Rutherford has revolutionised our ideas of the physical world. It is difficult to gain even the remotest conception of the realities underlying all these phenomena, but they have had the most profound effect on our conceptions of the material world.

If our ideas of the minute structure of matter have undergone revolutionary changes the same may be said of our conceptions of the structure and nature of the Universe.

Perhaps no instrument or principle ever discovered by man so impresses the imagination as the spectroscope. By its means can be determined the chemical elements in the surface layers of the star, the temperature of the surface layers, the motion of the star in space, the mass of the star—if a binary, and by mathematical analysis the temperature of the interior of the star. The most powerful telescope reveals nothing but a point of light, yet by passing the light from the star through the telescope and the attached spectroscope a photograph of the spectrum of a star can be obtained which will tell us all these things. Of course this requires a very fine technique, fine instruments and accurate measurements, but it is no more than the ordinary routine work of great observatories all over the world. Out of this work and out of the modern conception of the structure of the atom have been born the modern views of the universe.

To find the actual source from which stars or suns originate


we search for matter in the most tenuous and luminous state of all; we look to the nebulae, those great, faint hazy masses seen in a big telescope in parts of the sky. There are really three types but we can concern ourselves more particularly with the type known as extra-galactic nebulae, which are really universes outside our own universe of stars. The weight of some of these nebulae has been determined with fair accuracy; the great Andromeda nebula for instance equals 3500 million of our sun's weight. The distance is 900,000 light years. Many of these nebular universes outside our own consist largely of clouds of stars, but most of them contain a central region—still gaseous, destined in time to give birth to stars. Something like two million of these extra-galactic nebulae can be seen or photographed through a great telescope. The distance apart of these island universes appear to be of the order of two million light years and the greatest distance from us about 140 million light years. These island universes represent the greatest depths of space penetrated by human vision or photography, but there are so many faint nebulae visible at the limit of the 100-inch telescope that a much greater number may be revealed when the 200-inch telescope now being built is put into use. These island nebulae are quite distinct from our own galaxy which we see on looking at the Milky Way which stretches across the sky; a great system of stars estimated by various means to be from thirty thousand million to as many as three hundred thousand million. The two hundred and twenty thousand light years which represent the diameter of the densest part of our galactic system is nothing compared with the hundred of million of light years which separates us from some of the universes outside.

The earlier systems of cosmogony were chiefly concerned with the origin of the solar system. We need not concern ourselves with the many theories which have been brought forward from Laplace in 1755 to the end of the nineteenth century.

It was only in 1924 that Jeans brought forward a new theory of the origin of our sun and its attendant planets. It concerns itself with what would happen when two stars approached close to one another in space. The first effect is that each star raises tides in the other. The nearer they approach the higher the tides and the result must partly depend on the speed with which they pass one another. The occurrence can be investigated by mathematical analysis. If the approach is very close the tides raised by gravitation may take the form of gigantic mountains moving over the surface of the star. A closer approach may transform them into long arms of gas drawn out from the star. The arms eventually break up into a number of detached masses and planets have been formed out of the smaller star. When the planets are formed they are at first acted upon by the gravitational attraction of both stars and so describe most complicated orbits. Gradually the bigger star recedes and the planets remain describing orbits round the smaller star.

Into the details of this theory we need not go, but one most interesting fact emerges. It appears that the near approach of two stars in space is a very rare event, in fact it has been calculated that even after a star has lived its life of millions of millions of years the chance is still about a hundred thousand to one against its being a sun surrounded by planets.

Last century we were free to speculate as to the frequency of planetary systems attached to stars and might consider if we pleased countless suns as the centres of planetary systems. If the tidal theory of the origin of our solar system is correct, this condition must be exceedingly rare—even as regards the existence of planets and far more, planets whose physical conditions might resemble in any degree those of the earth. Even the members of our own system are either too hot or too cold or have no atmosphere or an insufficient amount of oxygen. There is just the possibility that Mars might support



some form of life of a general organisation and metabolism as we have here, and there are seasonal colour changes on certain regions of this planet which suggest that vegetation might occur but this, of course, is entirely conjectural. We have become aware then that out of a hundred thousand stars only one has a chance of being the parent of a system of planets and one would hesitate to conjecture the overwhelming odds against any reproducing the chemical and physical features of our earth so closely as to come within the very narrow range of the requirements of living structures. If not unique then life must be exceedingly rare.

It is probable that the present period from about 1915 is one in regard to physical discovery which may in the future be compared with the period about 1860 which saw the formulation of the Darwinian Theory of Evolution and the years immediately succeeding in which the study of the palaeontological record of the earth's crust brought such abundance of evidence to support the main theme of the theory. The change at that date in our outlook on the origin of the history and relationship of living things was brought about by the discoveries and theories of a group of great naturalists or biologists—Lamarck, Darwin, Wallace, Lyell, Huxley, Owen and Hooker.

In the present renaissance in the study of the non-living material of this universe, Einstein, Eddington, Jeans, De Sitter, Bohr, Heisenberg and Rutherford are names which even the most incomplete list must contain. Did time allow, a most interesting comparison might be made of the intellectual environment and conditions under which these two groups presented an altogether new conception of nature, man's origin, and man's place in the universe.

The fields of science which treat of the world of living things are many and varied accordingly as they treat of the form and structure, history and relationships and the methods by which life processes are carried out. Biological outlooks tend perhaps to be less self-contained than the studies con-

cerned with non-living material; we become aware of many cross connections and unsuspected relationships in knowledge. The fundamental biological sciences of Botany and Zoology in the course of time have extended their boundaries and given birth to many other sciences and some of these in turn have become concerned with the physical and chemical aspects of living things, others with the history and descent and therefore with the geological sciences, and others again with the social sciences. The stimulus which resulted in the openings of many of these activities must be traced initially to the theory of evolution. During the first half of the nineteenth century and even earlier many great biological thinkers and workers had been pondering over the problem and had even suggested ingenious but inadequate solutions. In the truly Olympic race in which all philosophical biologists, from Buffon and Erasmus Darwin to Richard Owen and Robert Chambers were more or less actively engaged, great thinkers and naturalists have repeatedly expressed their ideas concerning the evolution of the organic world. Erasmus Darwin spoke about a gradual transformation and adaptation to surroundings. Still more powerful was Lamarck's theory regarding the effect of the environment in producing new habits and the influence of the use and disuse of organs. Into the part played by a galaxy of great men at this time we need not enter; the field has been well traversed and has become a story known to some extent to every educated person.

We may then proceed to mention a few discoveries which have been made during the last few years regarding the activities of living cells and tissues. In regard to the growth and nutrition of plant and animal protoplasm there are three essential groups of substances involved; proteins, carbohydrates and fats. It is necessary before these can be incorporated into the living protoplasm that they be chemically transformed so as to enable them to be fitted in the molecular structure of the cell. This chemical transformation

in its mode is quite unlike the processes of the chemical laboratory.

Comparatively little was known of these transformations until the middle of the nineteenth century when Pasteur made important studies in this field. It remained to Buchner in 1896 to show that the substances producing these changes are in all cases non-living.

These substances now known as enzymes have important characteristics inasmuch as they are specific in their action and belong to a class of agents which initiate and hasten a chemical change but do not undergo a change themselves. Enzymes are non-living catalysts and are capable of being extracted in an unchanged condition from the living tissues in which they occur.

The influence of these colloidal catalysts (enzymes) has been found to be fundamental in all systems of cells or tissues in which dynamic events have been studied. They exert a specific control over complex chemical changes, and the most fundamental characteristic of all organisms is the extraordinary co-ordination in time and space of such changes.

This field is of the utmost importance to biology. Few if any of the chemical reactions displayed in an organism proceed without catalytic action. The most striking feature is that these reactions are so completely co-ordinated that the whole cell is maintained in dynamic equilibrium. If chemistry is going to help in biochemical studies towards a description of the living activities of cells it must take account of this chemical co-ordination which illustrates so well the subservience of parts to the whole which is the most remarkable characteristic of living tissues.

This control of the transformations of food material by enzymes in the cell and carried out in the specialised colloidal condition of the cell is sufficient to maintain the cell as a system which can remain in dynamic equilibrium with the environment. If the last twenty-five years have advanced our knowledge of the processes of enzyme action and the

metabolic equilibrium of living organisms two other remarkable classes of substances have been discovered since the beginning of the century.

In 1906 Sir Gowland Hopkins was led to suspect from nutrition experiments the presence of substances in living tissues of great importance in metabolic processes and in the reaction of the organism to environmental factors. Such substances are now well known under the name of vitamins. Several classes of these substances are known according to the special metabolic changes they control. We know little of their chemical nature although they can be extracted from living tissues without difficulty. One of the most remarkable characteristics of these substances is the fact that the most infinitesimal quantities will make all the difference between a diet which is useless and one which is useful.

The other substances to which I refer are the hormones: substances secreted by the living cell, often strictly localised in their origin which act as agents in the secretion of glandular cells and tissues and which in some cases initiate movement in response to stimuli as in some plants. The chemical constitution of some of these substances has been determined and in some cases they have been produced by artificial synthesis.

Discoveries of the nature I have just referred to, while they do not throw light upon the ultimate characters of the living cell, bring before us with emphasis the extraordinary features of co-ordination in living material in order to maintain equilibrium with the environment. In this connection we may ask how soon will the intellectual concepts based upon the new physics and the structure of matter invade and possibly revolutionise thought in the biological field. Will the data of atomic physics illumine the processes of life? At present we cannot even suggest an answer to this. Certain it is that there are not a few biological workers who have a strong *a priori* conviction that the living material of plants and animals may in some limited sense make use of

atomic energy and that such ability might be the special stamp of the living world. Some years ago such a suggestion was made in regard to the synthesis of carbohydrate material in the green cell in the presence of light, but this line of enquiry has not been pursued. One of the substances essential both to plant and animal cells, potassium, is a weakly radio-active substance and it was suggested by Professor Zwaademaker that the weak radio-activity of this element is an indispensable stimulus to certain vital activities. There is no proof that this influence is perceptible but it may be of interest to note the peculiar distribution of potassium in the cell, for while it is present in varying amounts in the cytoplasm, it seems to be invariably absent from the nuclear structures.

It should be mentioned that recent experimental studies seem to prove that living tissues may be the seat of radiations able to produce effects at a distance. It was claimed some years ago by Gurvitch, a Russian biologist, that cells in which nuclear division is taking place give out a radiation which initiates nuclear division in neighbouring cells. This work, which at first was met with general disbelief, has been re-investigated by several other workers and there seems to be some evidence if not proof that chemical reactions in living cells are really accompanied by radiations; that events in one cell may influence other cells at a distance without the transference of matter. Many of the claims made must be received with caution until fully confirmed, but that radiations are emitted from living cells and can be recognised by physical means, is a fact which is proved. This, of course, opens up a most interesting field of enquiry but we must bear in mind that there is no proof that such phenomena are of fundamental importance or that they are associated with all forms of life.

During the last decade, studies on the physiology of the cell have brought to light varied activities both as regards physical and chemical changes presenting ever a truer and

more complete picture of the cell as a centre of dynamic manifestations in equilibrium with the conditions in the cell and with the environment.

It is a fortunate circumstance that although animal physiology is studied and taught as a science quite independent from zoology, plant physiology has always remained an integral part of botany.

One of the most interesting and fundamental fields of investigation in the physiology of plants has to do with the action of chlorophyll in the synthesis of carbohydrate in the presence of light. The classic researches of Blackman at Cambridge over the latter part of the last century, and later on the factors affecting the rate of synthesis have been supplemented by studies on the chemistry of chlorophyll and the photochemical stages of the process. In this regard the name of Willstatter will be ever associated with the painstaking and monumental investigations of the structure of chlorophyll and the haemoglobin of blood, the discovery of magnesium in chlorophyll and the enzyme action in connection with the process. Proofs of the actual steps in the synthesis between the perception of radiation by the chlorophyll and the first appearance of sugar in the cell are still to seek and the whole matter offers one of the most fundamental and baffling problems in the realm of physiology.

It has become evident that the application of physical and chemical methods in the study of the cell has resulted in a vast array of knowledge regarding the co-ordinated activities of living material; outpost after outpost has been captured, but the central fortress is still unentered. The available weapons of chemistry and physics have not explained the ultimate character of the simplest living phenomena.

In this regard the last twenty-five years have seen a very gradual change in outlook on the part of a large number of biologists regarding the nature of the living world.



Many eminent biologists have adopted the view that the phenomena of life cannot be explained as the working of a

machine; the result of an arrangement of unlike substances or parts in fixed relation to each other. It is maintained that between the beginning and the end of an action there intervenes the unseen regulative vital factor. It is perhaps true that this view is more frequently held by systematists and morphologists, i.e. those who study form and structure rather than function.

It may be that in the final analysis life must be reduced to a series of impulses or strivings. Such actions may be a response to something in the environment or they may be autogenous; the latter referring especially to the impulses which initiate and carry on development from the fertilised egg to the adult form. All these impulses are directed to the attainment of a definite end and if prevented from reaching it in one way they will seek it in another.

The extreme opponents of vitalism, those who believe that matter and energy are the only realities in the universe, are faced with the newer concepts in physics. The more tenable position is held by those who think that the only scientific method of approach is to treat living tissues as chemical and physical complexes and to attempt to explain their activities as the result of their chemical compositions while admitting that there may be a non-physical factor concerned. This is a perfectly legitimate view but it is significant that so far by this method no complete solution of even the simplest living phenomena has been attained.

The trend towards a vitalistic view is of great interest—it is a feature of the last few years and runs parallel to the new views in physics and is a great contrast to the very definite mechanistic views of the latter part of the last century, which saw the first application of modern methods of chemistry and physics applied to the elucidation of the functions of living material. Since 1908 there has been an immense volume of observation and experiment on the methods by which Evolution takes place. First and foremost comes the



evidence of Fossils. Where in Darwin's day we had only a few samples from certain geological periods in the past, the last seventy years has seen an immense collection of evidence from all parts of the world and from all periods. This evidence has shown that the process of change which we can call Evolution is not an orderly procession from simple to more complex types, from less efficient to more efficient; it is something much more complex, although the main drift of life has been to organisms designed to cope successfully with more diverse conditions. Where, in the earliest geological periods, organisms were limited in the habitat or environment, we now find organisms able to cope with the conditions of every conceivable habitat on the earth.

This brings us to a consideration of what must be the two fundamental questions in an outlook upon the living world—first the origin of living things and secondly the means of differentiation of the vast number of different types and their relationships to one another.

In regard to the first, Science has nothing fresh to offer except the discarding of old hypothesis. In the light of studies on the physiology and biochemistry of the living material it is possible to offer some reasoned conjectures but the problem remains, and the possibility is obvious that it may always remain, unsolved. I remember on a certain occasion a biological philosopher remarking that it was as useful to discuss the origin of life as the origin of Entropy—which latter is a mathematical abstraction concerned with the direction in which changes occur in the physical world.

There is the possibility that life is a fundamental quality or activity of matter in a certain state arising in an environment of permanent atoms which are not subject to disruption by great temperatures and pressures. Jeans has even suggested that life may be a kind of disease of matter. In a sense it only arises on the ashes of matter—matter which has attained a degree of quiescence. But these are speculations, and there we must leave it.

Since the early days of the Darwinian Theory of Evolution by natural selection, new sciences have arisen and the older ones greatly extended.

When the protoplasmic unit known as the cell came to be regarded as an important structural and functional unit it became evident that the problems it presents could be to a certain extent studied by themselves and hence arose the science of cytology.

The phenomena discovered regarding the mechanism of the division of cells in growing tissues, the behaviour of the chromosomes differentiated from the nucleus, both in the division of somatic cells and the germ cells during fertilisation, have brought a new method to bear on the problems, and one that has been of great service in the field of genetics. The ultimate seat of the forces which produce changes in organisms must reside in the cell whatever view we take of the causes of Evolution. In this regard the behaviour of the chromosomes in the cell at the time of fertilisation must be of the greatest significance in the general problem. The evidence in this field has accumulated at an astonishing rate and gives a picture of the complexity of the problem quite unknown in early Darwinian days.

It is impossible to touch on these matters on the present occasion.

Bergson attributed Evolution to an *Élan vital* or vital impulse which causes organisms to seek new forms and relationships to the environment. This is the impression often given in a wide survey of living things if we bear in mind that the *Élan vital* often pushes organisms to extinction and that in other cases it seems to be quite absent, as some simple forms of animals have remained practically unchanged from Palaeozoic times—a period of perhaps three hundred million years.

It is probable that the fundamental evidence of the relationships of living organisms lies in the study of the past. There are in fact two methods of approach. One, the study of the

comparative anatomy, morphology, and embryology of existing groups and the other the study of the ancestral forms of existing plants and animals. Modern conceptions of relationship and descent are based upon evidence from both these sources but the final court of appeal lies with the evidence from the fossil forms.

As we may see different types of architecture woven into a great cathedral, so we see different types of structure woven into the great array of vegetation which has peopled the surface of the Earth in the past. Although the styles may be different, yet they all maintain the stability of the building and enable it to fulfil its destiny; so the manifold designs of past vegetation have in their turn all served to solve the age-old problems of growth, nutrition, reproduction and dispersal. The study of these types of plant architecture and their relationships to each other is the function of Palaeobotany—the branch of Botany dealing with plants of the past.

I quote from Seward:

As we follow the procession of floras through the ages, certain questions keep intruding themselves; what do the records of the rocks tell us of evolution; of the development of the plant world; what is the significance of the sharply contrasted geographical range of groups, families and genera shown by a comparison of extinct and living members of the Vegetable kingdom; what light is thrown by the wandering of plants over the Earth's Surface on the climates of the several Geological periods? As we try to piece together the scraps of history disinterred from the refuse heaps in nature's workshop, accumulated in the course of hundreds of millions of years, what is it that makes appeal to our imagination?

Let us for a moment imagine we could view the past, as a moving picture projected from the present into the geological past. As we view the picture, the human race soon fades into pre-human beings at the very beginning of our journey less than half a million years ago. Everest and the Himalayas give place to ocean depths and the Rockies are replaced by a rolling and slightly elevated plain and the flowering plants so comparatively new from nature's workshop and yet so old

compared with man, fade away at a period just before the rocks of this country were being laid down some ninety million years ago; and as we continue our time journey into a strange world we see a great continental mass in the Southern hemisphere—composed of what is now South America, the South Atlantic, Africa, the Indian Ocean, India and Australia, clothed with a vegetation of which not one type exists to-day. This continent of carboniferous times is known by geologists under the name of Gondwanaland from a district in India where these deposits were first studied. In the North exist two continental masses; one extends over America, the northern Atlantic and part of Europe and another occupies North Eastern Asia. Here we should see great forests formed of plants belonging to the Pteridophyta. Two types of these forest trees we should at once note, as they would remind us in some vague way, in the character of their leaves, their branching, and the manner in which the sporangia were borne, of two familiar plants of the present day—one, a small trailing plant of moorlands, woodlands and hillsides and the other of the small spiky Equisetum or Horsetail, so common on roadsides, waste ground and sometimes a pestilent weed on badly drained grasslands. The race to which these plants belonged were the aristocrats of the plant world in the Carboniferous period, represented by lofty forest trees covering great areas in the continental masses of the northern hemisphere. Their most detailed structure is known from fossil material collected from Carboniferous rocks in Europe, Asia and North America. A change of fortune as complete and devastating as this seems to be the inevitable fate of numerous great families of plants as we trace their history through the tattered and incomplete volume of geological time. It reminds one of the picture drawn by Hardy in "Tess of the D'Urbervilles" of old John Durbeyfield the haggler, but the descendant of knights and barons. 'Yes, that's the D'Urbervillenose and chin—a little debased,' says Parson Tringham in conveying the news to him.



At length our picture brings us to a land as yet unclothed with vegetation and in the primaeval seas we should see a great race—most varied in appearance and yet possessing certain fundamental characters in common—resembling in some dim fashion the seaweeds of the present day—endowed with miraculous potentialities—the ancestral forms of the plant kingdom. Were our picture to extend farther back we should view other seas which contained no life to our vision although still crowded with microscopic forms. Certain it is that the cradle and home of primitive vegetation lay in the ocean; this is no mere guess-work but the conclusion reached by cumulative evidence from many different sources. The transmigration of the thalassiphyta or ocean vegetation to a land habit must have been one of the great epical movements of the living world. Bathed and supported in a medium of almost uniform temperature containing all the materials for nutrition, transferred to an inhospitable land surface, exposed to the wind, scorched by the sun, sometimes chilled or frozen by the air, with a water supply which had to be drawn from varying supplies in the soil demanding a new architecture for the conveyance of materials between a subterranean part and the aerial portion, with entirely new problems in regard to reproduction and dispersal on a land surface—this transmigration must have been one of Nature's great ventures. Some hint of the structural features of these early pioneers of a land habit is seen in the vegetation discovered in a Devonian peat bog—long since petrified—near the little village of Rhynie in Aberdeenshire about 1914 by the Scottish Geological Survey. This material has been described in a series of memoirs by Kidston and Laing and published in the *Transactions of the Royal Society, Edinburgh*. They represent the earliest land plants known, still retain some marked features of their algal ancestry and at the same time form the earliest examples of that great group the Pteridophyta; which group was later to produce the great Lepidodendron, Sigillaria, Equisetum trees of the Carboni-

ferous period and the multitudinous forms of ferns of the present day.

Some of the vegetation of the present day in certain regions of the world gives us glimpses of other days. The scattered trees of the Cycad family in Australia or Japan or even a great forest of Coniferous trees such as the Sequoia trees of the Californian Sierras bring before us the memories of a great group of plants which existed triumphantly for hundreds of millions of years after the Carboniferous period. Dr Holloway speaks of the general appearance of the flora of Stewart Island, New Zealand as suggestive of a past age where gymnosperms and pteridophytes, ferns and fern-like plants, were dominant rather than angiosperms.

I will not ask you to accompany me into any details of the structural features of past races, but will try to bring before you certain general tendencies or principles which discovery over the last quarter of a century has crystallised.

One of the most outstanding studies in botanical science concerned with the evolution of a group is due to the labours of Bower during the last twenty years and deals with the descent and relationships of different groups of existing ferns. It would be outside the limits of this discourse to go into details, but I should like to refer in barest outline to the work in order to illustrate a general principle. The Filicales are an ancient group of plants stretching in their history back into the early fossiliferous rocks of the crust of the Earth and represented at the present day by many sub-groups. It is the present-day groups which have been subjected to an exhaustive study by Bower and the result is a new outlook upon the architectural features of the fern sporophyte.

It has long been thought that the groups having massive sporangia really represent a primitive, and the more delicate and small sporangial ferns a later and derivative type; the advance of palaeontological evidence has tended to confirm this conclusion. Between the extremes characterised pri-

marily by their sporangia the fern series may be viewed not as a single linear sequence but as a great fan of advancing lines. The interest lies in the general progression repeated in a number of lines, involving other characters than the sporangia and giving evidence of a phyletic drift towards a more exact and delicate construction as the evolution of the Filicales progressed.

While the number of spores produced in a simple sporangium of the more massive primitive type is 2500, the more delicate types produce numbers ranging from 64 to 16. These features of course indicate that the general architecture of the plant is more perfect as regards reproduction; that there has been a progressive reduction in the size of sporangia, in their complexity of structure and in the number of spores produced in the sporangia; with a parallel increasing exactitude in the opening mechanism of the sporangia to release the spores for distribution. Spore reduction indicates the elaboration of less material and an actual increase of efficiency in the resulting structure: a principle which can be traced again and again as occurring in the evolution of organs.

While detailed morphological work has indicated the relationships in modern groups and lines of descent, the most overwhelming and tangible evidence has lain in the study of ancestral forms from the strata of different ages. The earlier days of this century saw exceedingly optimistic views of the matter; it was considered that the main line of descent of the plant kingdom could be represented as a tree with the great phyla converging into a common trunk in early geological times. The poverty of evidence was largely responsible for this view together with an inappreciation of the feature of convergence and parallel development which we now know to be such a common feature in the architectural development of living things.

The Pteridophyta are an interesting group because we know so much comparatively about their history in geological time. One extraordinary feature is the fact that in

Carboniferous times the phylum produced a branch group which developed the habit of forming seeds—a habit quite foreign to the ferns either in past ages or the present. I may state that the seed habit is a distinctive feature found only in the gymnosperms, the flowering plants and these extinct ferns and is the greatest departure the plant world has made as regards methods of reproduction and dispersal. The seed habit of ferns of the Carboniferous period was first discovered in 1903 by Oliver but our knowledge of the extent and diversity of these seed ferns has been greatly extended in recent years. This early development of the seed habit has no connection with the seed habit of the far more recent angiosperms or flowering plants. In the ferns it led nowhere except to the production of exceedingly complex seeds—far more complex than any developed in later times by the flowering plants. For some reason this race became extinct in later though still distant geological ages. It is obvious that we should never have known that the ferns gave rise to a seed-bearing offshoot had it not been for palaeobotanical evidence.

New fields in the study of existing vegetation have been opened during the present century. In particular the study of Plant Ecology in its many varied aspects has assumed great importance. Fundamentally Ecology is the study of plants in relation to their environment and in this way it has close relationship to Geography, Geology and Meteorology. In the course of the last twenty-five years this branch of Botany has been greatly extended and has given a new outlook on the vegetation of the world. Before this period our knowledge of the vegetation consisted of lists of the families, genera and species occurring in certain geographical regions. While this is of fundamental importance it does not give a picture of the vegetation as a whole or the grouping of plants into definite communities. Such grouping is obvious as regards the primary divisions of vegetation into desert, grassland and forest. Further these primary divisions can be divided into many types such as forest into evergreen and

deciduous. These primary vegetation units can be designated as climatic formations for they are due to broad climatic features, particularly the amount and incidence of rainfall at different seasons of the year. Closer study of the flora of a region has shown that a climatic formation can be divided into a series of communities or associations which under similar conditions in a region are uniform. The distribution of associations can be represented on a map with the same precision as the types of rock are represented on a geological map. In this way studies of the natural existing vegetation has been made of many regions of Europe, North and South America, Australia and some Arctic regions.

Study has shown that existing vegetation is dynamic rather than static and that associations of plants undergo a series of changes or developments which may in some cases be due to secular changes in the environment or in other cases to the activity of the plants producing environmental changes. As an illustration it is found that some types of evergreen forests are not permanent owing to the fact that the seedlings cannot thrive under the dense shade of the parent forest and this allows the natural introduction of other trees, resulting in the replacement of the original forest by another type. Some of these vegetation successions are comparatively rapid; others may take hundreds of years and the elucidation of some of the problems requires much detailed study of the conditions. When the natural succession is interfered with by fire or the activities of man, such as artificial drainage or the effect of the clearing of forest on the grouping of vegetation, many complex questions are encountered. Thus the study of plant ecology has been carried out both from the point of view of the distribution and grouping in space and of time.

One of the most valuable sources of evidence in regard to the latter are the great peat deposits which are of such frequent occurrence in certain temperate regions such as North-West Europe and northern North America. These deposits consist entirely of the partly decomposed plant remains of the

vegetation which has clothed the areas since the Glacial Period. It is not difficult to identify many of the plant remains at successive levels of these deposits, which often reach a depth of twenty to thirty feet. The lower strata represent the remains of a vegetation which existed soon after the passing away of the last ice-sheet. Far greater precision and detail has been given to these studies by the recognition of the fact that pollen grains preserved under these conditions are practically indestructible. By the examination of minute samples of peat at each successive centimetre of a peat deposit it is possible to arrive at a knowledge of the types of forest and vegetation which have existed on or near the deposits since the end of the Glacial Epoch, which in some regions of North-West Europe represents a period of about 14,000 years. This brings these studies into the time range of archaeology. Arising from this it is now possible to include in the account of the culture of early post-glacial human history given by archaeological investigation a picture of the vegetation and climatic conditions under which man lived. Deposits of plant remains, representing old peat logs are sometimes found interleaved with the deposits formed by the four ice-sheets which successively covered North-West Europe. The knowledge gained from these studies indicates widespread changes in the distribution of the flora of Europe which in turn must have had a profound influence on the migration and the culture of the human race in pre-historical periods.

In such studies it must be realised that long as a period of half a million years may be from a human point of view it is but the last phase of geological history and a period so short that no great change has taken place in the genera or species of the world flora in spite of the profound changes in distribution and grouping of vegetation as a whole.

Thus the evolution of mankind has taken place in a world covered with the types of plants familiar to us at the present day.



During the period we are considering, the recognition of new fields of science has proceeded in the Universities. I will mention only two. The growth of new conceptions in geography which were occurring at the end of the century have gathered force and new outlooks have come about. In Botany and in Zoology the organism in relation to environment has long been one of the important fields of enquiry, and has given rise to Plant Ecology and Animal Ecology. There has grown up a corresponding conception in geography of, first the influence of the environment on man and secondly the influence of man on the environment. This primary outlook has led to consideration of the natural causes of the building up of states and cultures in definite regional parts of the world, on the natural causes for the initiation of trade routes and transport, on the great racial migrations of humanity. Inasmuch as the environment may be said to be a complex of the factors of topography, soil, scenery, climatic conditions, weather conditions, flora, fauna and the history of mankind, Geography is in contact with many fields of human enquiry which, listed specifically by recognised subjects, may be said to consist of Geology, Botany, Zoology, Meteorology, Physics, Oceanography, Archaeology, Anthropology and History. This is well reflected in a journal such as the *Geographical Journal of the Royal Geographical Society of London*, which contains month by month new investigations in all these fields and abstracts from papers in journals dealing with the sciences.

This movement was due to a group of men amongst whom Herbertson at Oxford, Chisholm at Edinburgh and Sir John Scott Keltie, Secretary of the Royal Geographical Society, were especially prominent. In this connection we may refer to the influence the great scientific societies exert on the progress of research. The Royal Society of London, the Geological Society, the Linnean Society, the Royal Geographical Society, the Zoological Society, the Meteorological Society, the Royal Society of Edinburgh, in the

British Isles alone, to say nothing of similar societies in European countries, by means of the publication of research papers, providing for the exchange of opinion at meetings held at frequent intervals, by extensive library facilities, and by the award of funds for the prosecution of research, confer an immense benefit. Men of science in this country occupy a very detached position—the Royal Society of Canada meets but once a year for three days; and apart from this Canadian workers are dependent for exchange of views on rare visits to other countries and the publication of papers in societies outside Canada.

In mentioning just now the study of the environment, I included scenery, having in mind the remarks of Sir Francis Younghusband, formerly President of the Royal Geographical Society. Speaking at the Centenary celebration of the Society in 1930, he said:

One other subject I had in view during my Presidency. I have told you how in delivering my first lecture to this Society I was pining to express the impression the sight of the highest Himalayan peaks had made upon me but had feared that any such aberration from the narrow path would be considered "unscientific" and therefore unworthy of the Royal Geographical Society. But now that I was President I felt free to have my own say in this matter. In my Presidential Address I therefore claimed that the description of the natural beauty of a region was just as much our business as the measurement of it for a map. To know all we can about the face of Mother Earth is our business. And if we can see beauty in her features we should say so and say wherein that beauty lies. Travellers should be measurers certainly. But if they also have something of the artist in them they should not suppress it when addressing this Society. Rather should they train and develop that side of them as carefully as Mr Reeves trains them in measuring, so that they can bring back from a region not only a map but a picture as well—a picture either in words or in colours, but anyhow enabling us to see the particular beauty which is its—and even a desert has its own peculiar beauty. Then only shall we be able to know and understand a country to the full.

The rise and importance of the science of anthropology or the study of the phylogeny of man has, during the last



twenty-five years, become of so much importance that Chairs and Departments have been founded in many Universities in different countries. As it deals with matters of first rate interest and importance to the human race, and has connection with the study of anatomy, glacial geology, botany, zoology, the first beginnings of art, the development of tools, the origin of religion, we must recognise that great strides have been made in the evolutionary history of man by the labours of men in these various fields of science. The past theories of Darwinian days on the evolution of man based on similarities in embryology and anatomy with existing branches of the Simian race have been supplemented by a great body of evidence furnished by the discovery of early human and pre-human skulls and skeletons from Great Britain, Belgium, Germany, Spain, South Africa, China and other regions. The result of this is to shift the origin of the differentiation of the human type to a much earlier geological period and to prove conclusively that man originated far back in pre-glacial times from a line of descent which has produced on one main stem the Simian race and on the other the human race. The leaven of education in broadening outlook and the indisputable character of the evidence furnished from so many parts of the world has silenced criticism, and the bitter feeling that the theory engendered in many types of minds in early Darwinian days has passed away.

It is fitting to mention the subject on this occasion because of the wealth of material that has accumulated during the last twenty-five years, the various steps of human culture which have been revealed and the connection of these stages with definite changes in the distribution of flora and fauna in glacial, inter-glacial and early post-glacial periods.

The story falls within the period of the most recent geological changes and owing to the precise measurements introduced by De Geer in Sweden and Antevs in North America regarding the banding of the glacial clays due to the

annual melting periods of the ice sheets, we are able to assign a definite chronology in actual years to the later steps.

The whole history of man from his first appearance on the Earth is as regards Geological time a very short period, possibly 300,000 to half a million would span it.

The story begins about 300,000 years B.C. in the Chellean period which saw the development of unworked flint tools succeeded by the Acheulian 80,000 years B.C., the Mousterian 40,000 years, Aurignacian 20,000 years, Solutrian 15,000 years, Magdalenian 13,000 years, Azilian 8000 years, Neolithic 3000 years, succeeded by the historical periods of bronze and the later iron age. The chronology of the earlier periods is open to revision but the later ones are more precise as they can be correlated with the measurements carried out by De Geer. These periods are definite stages in human culture as regards the fashioning of tools, rock paintings and other handiwork and can be correlated with some certainty with the several ice sheets and inter-glacial ice-free periods in Europe and Asia.

The interpretation of the skull structure of early man is a matter of highly technical anatomical enquiry, and even had I the special knowledge to deal with it I could not do so without copious illustration. Brief mention might be made of some of these ancestors of ours. The type known as Pithecanthropus discovered in Java by Dubois was originally thought to be pre-human but later discoveries have placed him nearer the human threshold. His contemporary in England, the Piltdown man, had a brain of a decidedly human type. Because of his primitive type Pithecanthropus has until lately been considered a type which had somehow come down unchanged from a much earlier geological period. Hence it was expected that when his contemporary was discovered in Asia he would represent a similar type to the Piltdown man. In 1927, 1928 and 1929 as the result of a systematic search in vast fossiliferous deposits near Peking, remains of peculiar human beings were discovered by Prof.



Black, a Canadian and a distinguished anatomist, in conjunction with several other scientific men.

This type, since named *Sinanthropus*, has proved to be a closely similar type to *Pithecanthropus* and represents the type of people who lived at the Eastern end of Asia at the beginning of the ice age 250,000 years ago according to our reckoning.

Australopithecus, discovered by Prof. Dart north of Kimberley in South Africa a few years ago, is another find of the utmost importance inasmuch as in the proportion of cerebellum to cerebrum the brain may be regarded as human, but in volume and convolutionary matter it is definitely anthropoid. According to Prof. Dart this animal had developed to some extent the human upright posture and his lower limbs for purposes of terrestrial progression. The main line of human descent has thrown off many branches or races, some of which have become extinct, but the main story is slowly emerging as more evidence is unearthed year by year.

Man has had a brief existence—he is in his very infancy, yet he has peopled the Earth and changed its face, weighed the stars and sounded the greatest depths of space. He is assured on astronomical and physical evidence of the Earth as a dwelling place for yet a million million years.

TWENTY-FIVE YEARS OF PHILOSOPHICAL SPECULATION

BY

PROFESSOR JOHN MALCOLM MACEACHRAN

The attempt to arrive at a proper evaluation of the contributions which have swelled and quickened the stream of philosophical thought during the past quarter of a century presents difficulties which are well-nigh insuperable. To begin with, this period represents a field so rich in philosophical speculations and psychological investigations with all the implications of their resultant theories for educational and social problems, that it is impossible to give anything like an adequate estimate of the fruit-bearing possibilities of that field. Again, many of these theories seem to stand out in such strange contradiction and antagonism to one another, that much confusion is immediately introduced into any picture it seems possible to present. That confusion may, of course, only be apparent, or may exist only for the time being. It may even be very significant, as, indeed, I believe it is, for the future. Active periods of philosophical speculation of the controversial sort usually indicate transitional periods from old to new world systems of thought. The critical spirit which manifests itself so strongly during these periods is indicative of a natural reaction against old systems of thought which have begun to betray symptoms of a stiff and unyielding nature, and to manifest an inevitable creaking at the joints owing to their efforts to readjust themselves to the ever-accelerating progress of knowledge and experience. That is why it is so difficult—particularly in the field of philosophical



speculation—to give an adequate judgment in regard to the significance of the developments of the immediate past. Only Time—the great infallible judge of human achievements—can arrange those discordant elements into a harmonious perspective which can guarantee a true portrait on a genuinely historical background.

When as a student I entered the University, it was with the settled purpose of directing myself to the study of philosophy. This was in 1888. The great controversy which had been waged by Philosophical Idealism, against Scientific Naturalism and its companion movements, Empiricism and Utilitarianism, during the second half of the nineteenth century, had left Idealism firmly established in the philosophical departments, at least, of the universities of the English-speaking world. In England the leading representatives were Edward Caird, F. H. Bradley, and Bernard Bosanquet, all of Oxford. In the United States, Josiah Royce of Harvard stood first among the speculative philosophers of his country. In Canada, John Watson of Queen's University was the ablest representative of the Philosophy of Idealism.

My first text-book was Watson's *Outline of Philosophy*. It bore on almost every page the marks of the philosophical controversies in which the author had himself actively participated. In this book he proceeded first of all to demolish in turn the three great philosophical leaders of the century—Auguste Comte, John Stuart Mill, and Herbert Spencer. But the author was not satisfied with this achievement. Other criticisms followed. It was said that when Professor Watson was called to the Chair of Philosophy in Queen's University, the great Canadian stronghold of Presbyterianism, the works of Darwin were locked up in the safe. Whether or not this story be true, Watson dragged the Darwinian doctrine of Natural Selection out into the light of day and into the open field of philosophical combat with the result that, though its life was spared, it was sent away in confusion, limping visibly,

and disclaiming any further pretence to the dignity or decency of a comprehensive philosophical theory. Kant, the leader of the great Idealistic movement that swept over Germany in the second part of the eighteenth and the first part of the nineteenth century, was subjected to serious criticism, but was treated kindly or even tenderly, for he and his followers had tendered valiant assistance to the English Idealists in their anti-naturalistic campaign.

Another text-book prescribed for supplementary reading was Watson's *Hedonistic Theories*. In this book the author engaged single-handed in battle with all the Hedonists from Aristippus the Cyrenaic who lived in the fourth century B.C. to Herbert Spencer who was then still living. Needless to say, he left them all dead upon the field, hoping, no doubt, that posterity would bury them decently. As a young student of philosophy, I regarded this as a great achievement, and even more remarkable in its significance than the victory of David over Goliath. I had always in my youthful mind secretly cherished doubt as to the good sportmanship of the stone-slinging David in his tactics against the bulky heavily-armoured Philistine; but Professor Watson fought and vanquished the Hedonists with their own logical weapons. I always felt, moreover, that they richly deserved their fate, for they openly and shamelessly advocated the doctrine that pleasure is the end of life—a doctrine that seemed to reveal a shallow mind, a weak heart, and a decadent spirit as compared with the vigorous self-discipline called for by the Kantian categorical imperative with its strong flavour of inviolable law, as well as by the Stoical sturdiness of the teachings of St Paul. Not pleasure but self-realisation was the Idealistic way of life, and this ethical ideal was based upon a metaphysic of singular logical cogency and spiritual significance.

Now Idealism was from a religious point of view a thoroughly respectable church-going philosophy. But while it appeared fairly regularly in its pew on Sundays, it listened

to the pronouncements of orthodox theology with certain important reservations in the background of its thinking. The need for this new philosophy, in fact, according to T. H. Green, was clearly indicated by the desire of the educated multitude for a more palatable type of spiritual food than that afforded by the wearisome out-grown formulae of the stereotyped theology of that day. The deeply contemplative poetry of Wordsworth, Browning and Tennyson, had offered a refuge from the noisy mechanistic and crudely materialistic world of the latter part of the nineteenth century; but while poetry had a truth of its own, and made special appeal to the feelings, a new philosophy was urgently needed to carry that appeal to the reason. That was the justification which T. H. Green gave for his *Prolegomena to Ethics*, the object of which was to provide a proper foundation for Ethics—a foundation which he believed could be found only in Metaphysics.

It must not be supposed that Green thought of this new philosophy merely in terms of a substitute for orthodox theology, or, of a weapon to be used against Naturalism. The supreme function of speculative philosophy is that disinterested contemplation of truth which alone makes possible the knowledge of first principles, and Green's *Prolegomena* is, in reality, dominated by that ideal. F. H. Bradley, also, in his introduction to his great classic treatise, *Appearance and Reality*, makes this clear in his defence of Metaphysics. It is true, he speaks of the value of Metaphysics as affording an antidote to the shortcomings of orthodox theology on the one hand, and Materialism on the other.¹ But the real reason why metaphysics has a permanent value of its own reflects a much more disinterested motive.

When poetry, art, and religion have ceased wholly to interest, or when they show no longer any tendency to struggle with ultimate problems and to come to an understanding with them; when the sense of mystery

¹ *Appearance and Reality*, Second Edition, p. 5.

and enchantment no longer draws the mind to wander aimlessly and to love it knows not what; when, in short, twilight has no charm—then metaphysics will be worthless.¹

The disinterested spirit of philosophical speculation is still more powerfully indicated in another passage in which Bradley reveals a certain impatience with that tendency in England to allow practical considerations, personal interests and religious pre-suppositions to interfere with the free and whole-hearted pursuit of first principles.

The task of the metaphysician is to enquire into ultimate truth, and he cannot be called on to consider anything else, however important it may be. We have but little notion in England of freedom either in art or in science. Irrelevant appeals to practical results are allowed to make themselves heard. And in certain regions of art and science this sin brings its own punishment; for we fail through timidity and through a want of singleness and sincerity. That a man should treat of God and religion in order merely to understand them, and apart from the influence of some other consideration and inducement, is to many of us in part unintelligible, and in part also shocking. And hence English thought on these subjects, where it has not studied in a foreign school, is theoretically worthless.²

It was this tendency to allow particular interests to obstruct the paths along which lay the clearer vision of truth that vitiated the whole thinking of nineteenth-century England. Thus Bentham, the leader of nineteenth-century Utilitarianism, was a political economist and practical reformer, while J. S. Mill, who received his inspiration from Bentham and the French Positivist Comte, was primarily interested in social problems and looked to the empirical methods of science rather than to the speculative methods of philosophy for assistance in their solution. Spencer, moreover, the greatest English philosopher of the nineteenth century, arrived at the central ideas which were later to determine his thinking when he was engaged, first as an

¹ *Ibid.* pp. 3-4.

² *Ibid.* p. 450.

engineer, and later as a sub-editor of the *Economist*. He was the philosophical echo of the great triumphs of the scientific knowledge and scientific invention of his day, and the exponent of the extraordinary advance of industrialism which accompanied that advancement. His whole *Synthetic Philosophy*, in fact, bore the impress of a dexterous assemblage of parts by the trained hands of an engineer. It fairly creaked throughout its loosely jointed mechanism and reeked in its whole structure of the scientific and economic materialism of the age.

This was the atmosphere into which the new English Idealism was born. The physical sciences and the mechanistic materialistic point of view had long been in the ascendancy. Hume had over a century before denied the claim of the physical sciences to arrive at a real knowledge of nature. The truths of science were, he affirmed, at best, problematical. But, at the same time, he indicated how the methods of science, which served admirably the practical purposes of life, might be applied to the explanation of the mental and moral world, thus rendering metaphysics with its own special methods unnecessary. The Darwinian theory of Evolution, coming later, added plausibility to this view. The world of spiritual realities and spiritual values seemed, in fact, to lend itself to a completely naturalistic explanation.

The pioneers of the new Idealistic movement in English philosophy were the poet, Samuel Coleridge, and the philosophical essayist, James Frederick Ferrier. The prophet of the new outlook was Carlyle, but it was T. H. Green who produced the first philosophical statement of the new Idealism, that was destined to become classic. This was contained in his *Prolegomena to Ethics* to which reference has already been made.

Green approached the problem of Metaphysics by asking the question—Can the knowledge of nature be itself a part or product of nature? Now the physicists assumed that nature could be explained in terms of matter and motion. But,

argued Green, matter and motion, as we know them, can be understood only in terms of the great complexity of relations subsisting between elementary sensations or feelings within the context of experience. But such relations involve the existence of some discriminating and combining agency, such as we know only in the activity of our own consciousness. There must then be a spiritual principle which operates like mind or self-consciousness pervading the universe, giving it order and meaning, and manifesting itself in the outward visible tangible world which, as it were, serves as an ever-changing garment of its own eternal life.

This spiritual principle Green called the "Eternal Consciousness"; and not only did the Eternal Consciousness manifest itself in the world of nature as its own orderly and beautiful creation, but it reproduced itself within the life of man. Now the Eternal Consciousness was for Philosophical Idealism just what God was for the Christian theologian. But the God of this philosophy no longer resided beyond the world in his Deistic retirement and reserve. His spirit permeated the whole universe and manifested its quickening power more especially within the inner life of man, to which it communicated the intensity of its own free self-determination and creative power. In the consciousness of thus participating in the divine life of God or the Eternal Consciousness, man recognised his own freedom of knowledge and of action and the possibilities of an ever fuller realisation of his own spiritual life extending into eternity. Thus, not only was the naturalistic interpretation of the universe disposed of, but due provision was made for the demands of knowledge, morals and religion, viewed from the higher level of the contemplative life.

The next and greatest representative of English Idealism was Francis Herbert Bradley. Born in 1846, he studied in Oxford and was a Fellow of Merton College till his death in 1924. He suffered almost continuously from ill-health, which prevented him from pursuing an active academic or public

career; but the peaceful retirement of a life within the beautiful and inspiring towers of Oxford enabled him to give to the world one of the most richly contemplative works in modern times and, perhaps, the most significant independent work in Metaphysics that has ever appeared in the English language. Bradley's *Appearance and Reality*, first published in 1893, and in an enlarged edition in 1897, is, in the brilliance of its dialectical and speculative power, one of the great masterpieces of our generation, and, in spite of the shifting currents of philosophical thought, I believe that from the purely contemplative attitude which it represents, it is destined to continue to exert a profoundly beneficial influence upon the spirit of philosophical speculation in the years to come.

From the earliest times in human history men have created their gods in terms of their own characteristic qualities and their own dominant aspirations; and they have used the gods, thus pictured in imaginative outline, to serve as models of truth and goodness and as the ultimate goals of human achievement. Bradley, also, strove to delineate upon a philosophical canvas a conception which would serve as the speculative counterpart of the religious conception of God. This he called the Absolute. He assumed, to begin with, that the Absolute, as the model of all perfection, must be self-consistent in the sense that it was completely self-explaining. It must, therefore, like the Eternal Consciousness of Green, be above and inclusive of all relations. But he could find in the whole compass of human experience, including self-consciousness itself, no attribute or set of attributes which could do justice to the internal self-consistency demanded by the Absolute. Every aspect of reality, upon examination, revealed itself to be dependent upon a wider reality and therefore not self-explaining. Thus, if we take any given thing, we find that it can be explained only in relation to a certain environment which reaches out beyond itself; this environment in relation to a still wider environment, and so to infinity. This is true of conceptions such as space and time,

motion and change, causation, activity and every other conception we care to consider. They are "appearances"—the term "appearance" meaning that which must find its explanation in something beyond itself. Even the human self is in this sense an "appearance". For it is quite obvious that the self cannot exist apart from the creative forces of nature, the relation to the family and to the community and all that these wider relations involve. The self has thus no independent existence, but must find its life within a wider and higher reality which includes it as one of its aspects or appearances.

Truth and error, goodness and evil, beauty and ugliness afford examples of stubborn contradictions of life, particularly on account of the practical difficulties that they add to the theoretical difficulties of resolving them in an Absolute which demands perfection. Yet it is easy to see to some extent how the struggle between these opposites leads to higher harmonies in life. We profit from our mistakes in the way of gaining wisdom, and we acquire from our failures and sufferings a broader sympathy with humanity and a larger vision of life, and we even succeed at times in extracting beauty from ugliness. It is therefore not absurd to suppose that ultimately these opposites are completely reconciled and reconciled in such a way that their very discordant elements add richness to the whole. For we must assume that the Absolute which is perfect contains all appearances or contradictory elements resolved into complete harmony within itself.

It might appear that the experience of the Absolute transcending all relations would be similar to that immediate unity with God which we experience in religion. But the very fact that we speak of our relation to God or God's relation to the world renders God a finite being just as the conception of the goodness of God gives to Him the sense of finitude. The Absolute is above all relations, is superpersonal and stands above goodness as it does above evil. Religion, though ideally, perhaps, more comprehensive than moral goodness, is equally a fragmentary aspect of life.

We may see, then, how every element of experience, from the simplest perception of a physical object to the highest conception of morals and religion, is appearance in Bradley's sense. Each is fragmentary in its nature, and points to a higher reality in which its imperfections are made good, and in which it is seen in the light of the whole. Something of the same thought appears in Tennyson's lines:

Flower in the crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand,
Little flower—but if I could understand,
What you are, root and all, and all in all,
I should know what God and man is.

Bradley's Absolute gives us a truly artistic picture of the universe as an all-inclusive spiritual system in which all the fragmentary forms and contradictory elements of experience are brought together and reconciled in the rich all-pervading harmony of the whole. The spiritual life of the Absolute may be described in terms of sentient experience which, however, rises above the finitude and relational character of human feeling, thought and volition, and becomes unified in an intuitional experience which, existing beyond relations, is analogous in its immediacy or directness, to that form of feeling which in its unanalysed form exists below relations. In the intuition of the Absolute, feeling, thought and volition, as we know them, have passed into a higher unity beyond themselves where they find complete rest in the unity of themselves with their object. This vision of an absolute intuition furnishes us with an ideal in relation to which we may judge of the truth and reality of finite forms of experience. For the degree of truth or reality which any fact or conception possesses will be determined by the degree of comprehensiveness, and thus the degree of unity or internal harmony, which it manifests when lit up by the vision of the Absolute.

Bradley's *Appearance and Reality* has sometimes appeared to me like a magnificent sonata in which a minor and a major chord are woven into a melody that is repeated in a multitude of variations, representing the transforming power of philosophic contemplation which persists in viewing all aspects of life in the totality of their significance. It tells of an attitude to life which precludes all narrowness of interest or limitations of vision, for it aims to see life always as a whole. If the result is sometimes to leave us in the mood of mysticism, it is a mysticism which is not born of obscurantism, but one which is distilled out of the highest efforts of the human mind to pursue truth even beyond itself into a realm where all the confusions of life vanish into the complete transparency of an intuitive vision.

It has been said that English Philosophy has tended to follow the course of national events as opposed to, for example, French Philosophy, which has preceded movements of national importance. Thus John Locke's *Essay on Civil Government*, defending the principle of constitutional government, followed the Revolution of 1688, while the writings of Voltaire, the Encyclopædists and Rousseau preceded, and to a large extent, caused the French Revolution. In the case of English Absolute Idealism, with its optimistic outlook and its quietistic spirit, it would appear that this philosophy was the reflexion of certain pleasant features of an age that was past. One pictures in this Idealistic music a peaceful rural population of beneficent landlords and contented tenants, and a prosperous urban population of busy factories and bustling business houses, extending their commerce to the remotest corners of the world. One might add to this picture the stability guaranteed by the wise government which immortalised the reign of Victoria the Good, and the peace and security guaranteed by the glorious traditions of the British navy with all the brass bands on deck playing "Rule, Britannia! Britannia rule the waves!" The English Idealism breathed out of its whole ideal of systematic perfection the

serene spirit of peace, contentment and security in a world in which everything was destined to come out all right. It was quite in accord with Browning's famous optimistic faith—

God's in His heaven—

All's right with the world!

meaning by 'the world', of course, dear old England.

Though the way had been prepared for the Idealistic philosophy in England by the Cambridge Platonists, Berkeley and the Platonic studies in Oxford, the inspiration for the philosophy of Green and Bradley came mainly from the great German Idealistic movement which began with Kant's *Critique of Pure Reason*, written in 1781, and ended with Hegel's death in 1831. Hegel's Philosophy had left the universe under the absolute command of Reason and, no doubt, that absolutism in Philosophy served as a very substantial support to the political absolutism which made the Prussian King not only Emperor of all the German States, but God's chief representative in Europe. This Absolutism represented unity, order, tidiness, discipline, and efficiency. But Germany was not content with the great achievement of attaining a political unity within her several states. She sought her place in the sun. It was not surprising, therefore, that, when the strong personal influence of Hegel as a teacher and writer had gone, she should take more kindly to the speculations of his great opponent, Schopenhauer, who made Will the governing principle of the Universe and ceaseless striving or active self-expression the essence of the life of the world and of man. Nietzsche caught the inspiration of this idea, and followed with his doctrine of the supreme and ruthless "Will to Power". Then cultural Germany began to organise herself into Nietzsche Societies, while Speculative Philosophy gave place to the cultivation of the Natural Sciences, which were, of course, the most serviceable instruments of the "Will to Power". This was all in harmony with the policy of the German Government which threw itself vigorously into the task of speeding up industry, extending its world of

trade and commerce, and building up a great merchant fleet and a navy. It was no wonder that a Germany which had long ago given up the contemplative Idealism of Hegel should look upon England which still remained at the Hegelian point of view as decadent. This was true of her most peace-loving philosophers. In the years immediately preceding the Great War, Wilhelm Wundt was the outstanding philosopher and psychologist in Germany. He was a consistent Idealist but sought to build up a speculative philosophy in complete harmony with Natural Science. He was one of the first to attempt to develop Psychology on a scientific basis, and founded the first psychological laboratory in the world in the University of Leipzig in 1879. Believing that psychological knowledge, on account of the fact that it is the immediate revelation of the nature of consciousness, is superior to all other forms of knowledge, he came to the conclusion that the universe is in its ultimate nature spiritual, and he affirmed that the essence of spirit is will. Wundt probably did more than any other thinker in our time to heal the traditional opposition between Science and Philosophy, and it is not surprising that when he perceived little evidence of the abatement of the old feud in England, he was led to affirm that, so far as philosophy was concerned, Oxford and Cambridge were still in the Middle Ages. Wundt died in 1920.

But for some considerable time certain important changes had been going on in England. England gradually woke up to the fact that she had labour troubles and other serious social problems to face. The old order was rapidly changing. She began to see her supremacy in the trade-markets of the world challenged and even her command of the sea threatened. It was perhaps no mere pleasure journey which King Edward, the Prince of social diplomats, made in 1907 to France, Spain, Portugal, and Italy—a journey which was caricatured in the German papers as a huge spider with the head of King Edward weaving a web about Germany. This “Umkreisungs Reise”, as the Germans called it, made them

very angry, particularly as the ultimate object of the journey seemed to them to be to woo Italy away from her alliance with Germany and Austria over to the more cordial fellowship of the English-French *entente*. And so it began to appear that England was not just dozing away her life in peaceful contemplation and inert self-satisfaction. She also was beginning to show signs of aggressiveness; and the philosophical counterpart of that new spirit is to be found in a movement started in 1902 by a number of young men in Oxford, the fortress of Absolute Idealism, against the rule of that philosophy, which had now held almost undisputed sway there and in the Universities of the English-speaking world for over forty years. These men longed for a philosophy of action. They felt that the old contemplative type of philosophy which had completely unified the world and explained error and evil away, thus neutralising personal worth and initiative, had become sedentary and stale, and that the Idealistic garment which had hitherto lent dignity to the spiritual order of things had begun to show signs of drabness, threadbareness and bagging at the knees. These young advocates of a more active and adventurous type of life were the Personal Idealists, and their first manifesto appeared in a volume entitled *Personal Idealism* published by eight authors in 1902.¹ They were sympathetic with the older Idealism in its opposition to Naturalism, and in its spiritualistic interpretation of the universe; but their sympathy extended no further. They strenuously objected to the method of criticising human experience, not from the standpoint of human experience itself, but from the visionary and impracticable standpoint of an absolute experience. They also condemned Absolutism for its exclusive devotion to the intellectual side of man's nature

¹ At the same time, or even before the Personal Idealists made their appearance in England, a similar movement was initiated by G. H. Howison in the University of California against the philosophy of Josiah Royce of Harvard who was the outstanding representative of Absolute Idealism in the United States.

to the neglect of the feeling and volitional side which they believed constituted the most important aspects of human personality. They declined to pay homage to a Monistic Absolute which proclaimed the perfection of a world in which human efforts counted for nothing. They preferred the pluralistic brand of universe exhibited in every-day life in which real forces of evil disputed in eternal conflict the claim of the forces of goodness to reign supreme. In a universe where there was no absolute guarantee of the ultimate victory of good over evil, human beings could, at least, join with the higher forces of the world in the combat against evil and bring the whole weight of human purpose to bear upon the issue with the reasonable hope of a progressive advance in the direction of victory.

Personal Idealism restored to English thought its traditional method of empiricism which had been dethroned by Absolute Idealism in favour of the transcendental or speculative methods characteristic of the German Idealism. It sought truth, not in fixed formulae established by the intellectual methods of logic, but in terms of generalisations or extracts from human experience. It was a new philosophy of progress based upon the reality of human effort and the efficacy of human ideals, and it was this new attitude which made it so different from Herbert Spencer's philosophy of progress with its mechanistic ring and its materialistic outlook. Personal Idealism sought to establish its claim to comprehensiveness on the basis of a new psychology of personality—a psychology which preceded on the assumption that the real secret of human development was to be found neither in the mechanistic conception of Science, nor in the principle of Natural Selection as conceived by the Evolutionary theory of Darwin, but in the teleological interpretation of personality which saw in the spontaneity of feeling and purposive action the true creative power and directing principle involved in the ideal of world progress.

While the Personal Idealists were valiantly striving to

avert the doom that threatened the extinction of human personality, as a result at once of naturalism which denied the reality of human freedom and of an Absolutism which guaranteed the perfection of the universe without the aid of human effort, they found a very welcome and powerful support across the English Channel, where a new star was rapidly rising on the philosophical horizon to light up the world with a larger vision of the meaning of life. This was the French philosopher Henri Bergson, who is without doubt the outstanding speculative philosopher in the world to-day. Bergson became a Professor in the *Collège de France* in 1900. He chose for his home a house in a peaceful and secluded place just outside the boundary of Paris. This house was surrounded by a high paling permitting him to live a life of complete privacy. He spent his long vacation in the Jura Mountains just west of Geneva, and from his villa which stood high among the pine trees he had an uninterrupted view of Mont Blanc and Lake Lemán and the whole surrounding country. Bergson believed that the power of concentration was the secret of success in life and indeed the secret of genius. He carried this conviction into his own life, and in the seclusion from the world which he enjoyed in his home, he could find time for concentration and contemplation. The possibility of such a spiritual retreat became very necessary when, later, practically over-night, Bergson became world-famous. In the session of 1908-9 when it was my privilege to attend Bergson's lectures, about fifty or sixty hearers came regularly to sit on the hard benches without backs in the *Collège de France* to hear him expound his philosophy. Two or three years later, when his chief work *Creative Evolution* became well known, the largest amphitheatre in the Sorbonne could not accommodate the crowds of society people who flocked to sit at his feet. Bergson was a modest retiring man with a sensitive and almost ascetic face. I fancy he was not particularly enamoured of his sudden rise to popularity. His lectures were delivered deliberately

and with great precision of phrase and beauty of form. He is perhaps the greatest poet-philosopher since Plato, and certainly his *Creative Evolution* is richer in poetic imagery than any philosophical writings since Plato's *Dialogues*.

Beginning with consciousness, the nature of which is revealed in Psychology, Bergson came to the conclusion that while consciousness, in the immediacy and fluidity of its content, gives the best clue to the ultimate nature of reality, it itself cannot lay claim to the supremacy assigned it by the Idealists. The supreme principle of the universe is not consciousness in the form of reason or will, or of some higher form of sentient experience such as Bradley advocates. It is rather life conceived as the great creative time-process—the *élan vital* as he calls it. Time is thus given a new significance originally suggested by Plato in the *Timaeus*. It is that spontaneous creative activity or vital impulse which expresses itself in the forward movement of the evolutionary process. It flows along like a stream, spontaneously dividing itself into innumerable rivulets, each a creative impulse giving birth to something new. These creative forces are not pushed on from behind by some mechanical system of causation nor are they pulled on from in front by some teleological device equally mechanical in its significance. They are absolutely spontaneous, and the outcome of their creative activity is unpredictable. As the stream of life moves on, carrying the whole past with it, and ever-enlarging and enriching itself with the new creations of the present and the possibilities extending into the future, there is a continuous slowing up of part of its movement resulting in its congealment into matter, much as sediment is formed and deposited in a river. But matter must be carried along as so much baggage, and the problem thus involved occupies the greater part of our conscious activities. That is why Bergson affirms that the intellect is adapted only to the practical tasks of life or to the life of action which involves the knowledge of solids and the

necessary adaptations to them. The intellect is not capable of penetrating the central stream which bathes these solids and organises them to participate more fully in its onward flow. The intellect is capable of thinking of a world extended in space, but not of life which is in its essence time. Life cannot be thought; it must be lived. Thus from an intellectual point of view, we may measure the width, depth and speed of a river with the idea, perhaps, of working out a power scheme, but in order to appreciate the life of the river we must live it by jumping into it and swimming with the current. In the same way, to experience the glow of life, one must dip into it in those intuitional glimmerings which are far removed from all practical interests. One must experience it as an inner intensity, in such flashes of insight as come to the pure scientist, the poet, the artist, and the speculative philosopher in moments of disinterested contemplation. But intuition must not be regarded as a completed form of intellectual activity, as in Bradley's sense of intuition. It is rather a special insight which parallels the intelligence of man. Intuition, in fact, more closely resembles the direct sympathetic understanding characteristic of instinct than it does the analytical approach to reality of intelligence. Like instinct, intuition is more natural, more fluid and more penetrating than the intellect which tends to tie itself up to mathematical and logical formulae and divides reality up into bits, instead of grasping it in its flowing nature. It is thus more in harmony with the continuity and creative spontaneity of life, since it enables us to project ourselves more directly into the central stream of life. The aim of the speculative philosopher, therefore, will be to catch those intuitive glimmerings of the essence of reality and attempt to weave them into a consistent picture, just as it will be the aim of the educator to develop that spontaneity of personality which adapts itself most readily and most sensitively to an ever-changing and ever-expanding world. That flexibility of adaptation is, in fact, the secret of politeness, humour and the graces of life

generally, which always charm because they preclude the very appearance of stiffness, mechanism, awkwardness and artificiality. Bergson was a genuine prophet of the spiritual life in the most elevated and less conventional sense of that term, as indicating a delicate sensitivity to the refinement and beauty of the inner life of imaginative spontaneity and contemplative creativeness in which man rises to his highest. His philosophy is a reflexion of the imaginativeness, the flexibility, the vivacity, the politeness and idealism of the French people at their best.

The philosophy of Bergson lent support not only to Personal Idealism, but to another movement in the United States and England which was closely allied with that movement. This was *Pragmatism*. Its greatest representative was William James of Harvard. Starting life like Wundt as a physiologist, James turned to psychology and in 1890 produced his *Principles of Psychology* which still remains the greatest classic work on that subject. James had a remarkably delicate sense for psychological analysis which far exceeded his more scientific contributions to the new psychology. This is in conformity with a well-known saying that William James was a psychologist who wrote like a novelist, while his brother Henry James was a novelist who wrote like a psychologist. Later James turned from Psychology to Philosophy. In this field, despite the popularity of his *Pragmatism*, published in 1907, and the rich suggestiveness of other works, he has not left the same impress as in the field of Psychology. His writings sometimes savour of flippancy and occasionally of something approaching opportunism. His colleague Santayana states that when James's *Pragmatism* appeared, it gave him a rude shock. "I could not stomach that way of speaking of truth", he says.

James was in his philosophical outlook deeply influenced by the British empirical philosophy of Hume and Mill, and by his own early training in the biological sciences. In both his psychology and his philosophy the biological note

dominated his whole thinking. His conception of the 'stream of consciousness' was the psychological counterpart of the fluidity of Bergson's biological conception of the 'stream of life'. In his philosophy James translated the biological conception of life into terms of action. His *Pragmatism* is the philosophical counterpart of the American democracy. The Presidents of the United States belong to no fixed order of succession, but are for the most part self-made men. Their lives are moulded in the strenuous business activities and practical politics of a vigorous rapidly developing nation with its own particular set of all-engrossing problems; and they are *made* presidents by the confidence of the people in the wisdom of their policies and the integrity of their personalities. In the same way, according to Pragmatism, the great ruling philosophical truths belong to no fixed system or divine order of things, but are *made* in the strenuous processes of experience. Their worth, in the last analysis, depends upon their ability to give direction to the practical life. Even scientific truths which are often supposed to be strictly demonstrable and even seem to decipher authentically the eternal thoughts of the Almighty really constitute no absolute transcript of reality. They are only generalisations from experience and, since experience is fluid, and in the continuous process of expansion, they can serve only as approximations which from some point of view may be useful.

Pragmatism limbers up the mind, giving to it that flexibility which discerns the shortcomings of the so-called eternal and immutable truths, in relation to the needs of a growing world. New truths are in the constant process of generation to harmonise with changing conditions, changing needs and changing experiences. These new truths must, however, fit in to the whole context of experience past and present with its forward look to the future. They must verify themselves in the strictest and broadest sense, which means in relation to experience as a whole. But there are some truths which

cannot demonstrate themselves in accordance with the methods of science and logic. Such are certain moral and religious truths which are of the utmost significance for action. We may take as an example the ancient dispute between Materialism and Spiritualism, which, if left to the intellectual methods of science and logic, becomes interminable. Viewing the problem, however, in the light of the outlook presented by the rival hypotheses so far as the life of action is concerned, it takes on a new meaning. Scientific materialism, as at present understood, predicts the ultimate destruction of the universe and thus spells "final wreck and tragedy" in regard to human values and human aspirations. A world with God in it, on the other hand, would at least hold out some hope that whatever may happen in the course of time, "tragedy is only provisional and partial and shipwreck and dissolution not the absolutely final things". "Materialism means simply the denial that the moral order is eternal, and the cutting off of ultimate hopes; spiritualism means the affirmation of an eternal moral order and the letting loose of hope."¹

The same attitude determines the issue between Pessimism and Optimism. Pessimism preaches the gloomy doctrine of ultimate defeat, Optimism the comfortable doctrine of assured victory. But an Optimism which affirms the world to be absolutely good is just as unacceptable as a Pessimism which affirms it to be absolutely hopeless; for both nullify the significance of human effort. It is far better to accept the world as experience reveals it actually to be—a Pluralistic Universe, which is to say, a universe sufficiently loosely jointed in its construction to permit the free play of a multitude of forces, some making for harmony and some for discord. In such a world of conflicting powers, there are all sorts of possibilities for human beings, and personalities higher than human beings, to join in the conflict on the side of the forces making for harmony in a vigorous co-operative

¹ *Pragmatism*, p. 107.

effort to make the world better. This is James's doctrine of *Meliorism*—the doctrine that the world is neither absolutely good nor absolutely bad, but that it affords abundant possibilities of becoming better, and invites us to enter wholeheartedly into the great game of life which thus presents itself. This is the outlook which produces a real faith in the ultimate goodness of the world—conceived not as an accomplished reality, but as the supreme goal of action—an outlook which adds reality and zest to life; and it is not difficult to see in this philosophy just the outlook of the young vigorous America of James's own day, enlarged and idealised in a world portrait.

It is the same motive which rises to the dominant note in James's final remarks on the religious outlook of Pragmatism.

May not religious optimism be too idyllic? Must *all* be saved? Is *no* price to be paid in the work of salvation? Is the last word sweet? Is all 'yes, yes' in the universe? Doesn't the fact of 'no' stand at the very core of life? Doesn't the very 'seriousness' that we attribute to life mean that ineluctable noes and losses form a part of it, that there are genuine sacrifices somewhere, and that something permanently drastic and bitter always remains at the bottom of its cup?

I cannot speak officially as a pragmatist here; all I can say is that my own pragmatism offers no objection to my taking sides with this more moralistic view, and giving up the claim of total reconciliation. The possibility of this is involved in the pragmatistic willingness to treat pluralism as a serious hypothesis. In the end it is our faith and not our logic that decides such questions, and I deny the right of any pretended logic to veto my own faith. I find myself willing to take the universe to be really dangerous and adventurous, without therefore backing out and crying 'no play'. I am willing to think that the prodigal-son attitude, open to us as it is in many vicissitudes, is not the right and final attitude towards the whole of life. I am willing that there should be real losses and real losers, and no total preservation of all that is. I can believe in the ideal as an ultimate, not as an origin, and as an extract, not the whole. When the cup is poured off, the dregs are left behind for ever, but the possibility of what is poured off is sweet enough to accept.¹

¹ *Pragmatism*, pp. 295-6.

James's Pragmatism was a very delectable mess of pottage, which had a way of steaming up and boiling over in brilliant literary outbursts of great freshness and rare fragrance. But while its particular flavouring proved very appetising to a rising generation of young and vigorous thinkers, it afforded no regulation diet for their diverse tastes. The result was that, just as the Pragmatists had affirmed that there was no one truth with a capital T, but a variety of truths corresponding to various situations and purposes, so it turned out that there was no one Pragmatism but as many Pragmatisms as there were explorers in the new and novel field of philosophic enquiry.

Next to James the most important representative of the Pragmatic movement is John Dewey. He has not the brilliancy or the light literary touch of James but he is a more consistent logical thinker, and it is possible that, for this reason, his influence on philosophy may be wider and more permanent. Dewey was originally an Idealist of the Hegelian School, but early in life he was caught up by, and became immersed in, the practical currents of the great Middle West, and gradually drifted away from Idealism in the direction of a philosophy which made thought the servant of action. His particular type of Pragmatism has appropriately been called *Instrumentalism* or *Experimentalism*.

Dewey's revolt against Idealism was due to his growing disbelief in the reality of the finished logical system of thought which that philosophy proclaimed. The mistake of Idealism was to regard thought or reason as the supreme principle of experience. It is rather a functional element in experience. Thought has no independent value in itself. Its value is relative to the art of living. When life proceeds normally, we act, but when conflict arises among those impulses which lead to action we are forced to think in order to determine the direction which action is to take. Thus thought furnishes, in its activities, tools or instruments to deal with situations in which action has been interrupted, or to anticipate possible

interruptions. Our ideas and ideals are consequently in a continuous process of change on account of the necessity of adapting themselves to new situations and new problems which are constantly arising, and their validity and permanency will depend upon their ability to serve adequately and continuously those vital functions which give life its ultimate meaning. Philosophical thinking is thus in the last analysis an experimental approach to the problems of the social life in which man finds the most complete expression of his higher faculties. It means perpetual examination, clarification and reconstruction, in the light of an ever-enlarging experience, of those fundamental purposes and working principles which are developing to fruition in our social activities.

Dewey has not been content to occupy himself with mere philosophical theorising. He has sought to introduce the philosophy of experimentation into particular departments of the social life. He has achieved great success, and has exerted a wide influence in the sphere of education. Here, also, the idea has been to get away from rigidity of system. Nothing could be more detrimental to educational advancement than the traditional curriculum and the cut-and-dried methods of instruction taught in the old-time training schools for teachers and insisted upon by supervisors and inspectors. The new attitude involved a competent knowledge of the capacities of the child and the nature of the social structure in which the life of the child is to find its most complete expression. This is possible only through the experimental approach on as scientific a basis as this field of investigation permits. The same attitude to the other social sciences is indicated in the following passage:

Intellectual prophecy is dangerous; but if I read the cultural signs of the times aright, the next synthetic movement in philosophy will emerge when the significance of the social sciences and arts has become an object of reflective attention in the same way that mathematical and physical sciences have been made the objects of thought in the past, and when their

full import is grasped. If I read these signs wrongly, nevertheless the statement may stand as a token of a factor significant in my own intellectual development.¹

The fact that life presents a continuous succession of problems which, according to the Pragmatic outlook, requires the ingenuity of human intelligence in the interests of action, suggests that the world does not display that degree of rationality which has been credited to it by Idealism. It has accordingly become the function of intelligence to create rationality where it does not exist and particularly in those spheres where the normal activities of life meet with resistance. Now the rationality of the universe was based upon the theory that the physical world is ultimately constituted by a supreme all-inclusive mind, and that its existence is identical with the process of knowing. But it now begins to appear that the physical world cannot thus be dissolved into the spiritual processes of mind. It appears, on the other hand, to manifest an independent reality of its own, and to offer to the activity of mind the resistance of an alien world. The independence of the physical world was first won back for it from Idealism by the publication of an article entitled "The Refutation of Idealism" by G. E. Moore of Cambridge, in *Mind* in 1903, and later, in his *Philosophical Studies* in 1922. A similar refutation of Idealism appeared in Bertrand Russell's *Problems of Philosophy* in 1912. This reaction against Idealism which has been called the *New Realism* was paralleled in the United States by the publication of a volume entitled the *New Realism* in 1912 by six leaders of American thought, and by another volume entitled *Essays in Critical Realism* published by seven other leading thinkers in 1920. These and other writings, together with the new movement in Psychology called *Behaviourism*, originated more recently in the United States, has brought that country well to the fore in the sphere of philosophical activity to-day.

There has been considerable divergence of theory between

¹ *Contemporary American Philosophy*, vol. II, p. 26.

the New Realists and the Critical Realists, the former holding that we know the world directly through certain perspectives or elements which are selected by the mind and enter into its life, the latter maintaining that we really know the world only by inference through our perceptions of it. There is also considerable difference of interpretation among the individual members of both schools, but in spite of these there is general agreement that the physical world is independent of mind and very much like the world of common-sense with which physics presents us.

The trend of philosophical speculation away from Idealism in the direction of Realism has had very important consequences for the philosophical outlook as to the significance of life. And here it is necessary to distinguish between Metaphysical Idealism and Moral Idealism. The former is a theory of the constitution of the universe; the latter represents an attitude to life and is not necessarily dependent upon the former. Now, while the new realistic movement has discredited Idealism as a metaphysic, it has retained or even strengthened its Idealistic outlook upon life. In doing so, it has, no doubt, passed through a severe process of disillusionment; but it believes that in the interests of the best that life has to offer, it is much preferable to know the world as it is—even at its worst—than to continue to live in a world of illusions bolstered up by a discredited metaphysic calculated to stimulate our courage and to preserve our faith. This note is particularly strong in the philosophic outlook of Bertrand Russell, who finds it necessary to seek compensation for the disillusionment of an alien world by building up a world of ideals within the inner and more intimate world of man's own making. This is the faith upon which Russell's *Free Man's Worship* is based.

"Brief and powerless is man's life; on him and all his race the slow, sure doom falls pitiless and dark. Blind to good and evil, reckless of destruction, omnipotent matter rolls on its relentless way; for Man, condemned to-day to lose his dearest, to-morrow himself to pass through the gate of

darkness, it remains only to cherish, ere yet the blow falls, the lofty thoughts that ennoble his little day; disdaining the coward terrors of the slave of Fate, to worship at the shrine that his own hands have built; undismayed by the empire of chance, to preserve a mind free from the wanton tyranny that rules his outward life; proudly defiant of the irresistible forces that tolerate, for a moment, his knowledge and his condemnation, to sustain alone, a weary but unyielding Atlas, the world that his own ideals have fashioned despite the trampling march of unconscious power.¹

For Ralph Perry, one of the leading American Realists, the outlook is not nearly so desperate. We are, he maintains, scarcely justified in adopting the attitude of martyrdom unless such an attitude promises to be, in the best sense, wise and profitable.

There is nothing dispiriting in realism. It involves the acceptance of the given situation as it is, with no attempt to think or imagine it already good. But it involves no less the conception of the reality and power of life. It is opposed equally to an idealistic anticipation of the victory of spirit, and to an idealistic confession of the impotence of spirit. In this sense all bold and forward living is realistic. It involves a sense for things as they are, an ideal of things as they should be, and a determination that, through enlightened action, things shall in time come to be what they should be.²

The tendency of the realistic Metaphysics to return to the common-sense material world of Physical Science is supported by the recent Behaviouristic movement in Psychology of which John B. Watson is the originator. James had already in his psychology discredited the time-honoured conception of the soul as a spiritual substance; and the Behaviouristic trend since James has gone still further in questioning the reality of the traditional concepts of mind and consciousness as spiritual entities. But while this movement in psychology has turned away from spiritualism in the direction of materialism, Physics, which hitherto scoffed at the spiritualistic conception of the universe formulated by

¹ *Philosophical Essays*, p. 70.

² *Present Philosophical Tendencies*, p. 347.

Idealism, has experienced a change of heart as remarkable as it is sudden. This has been due, in the first place, to the complete collapse of the three-dimensional Space of Newton following the investigations of Minkowski, Lorentz and Einstein, and, in the second place, to the shattering of the atom—the traditional unit of matter—into electrons, wavelengths or radiations, the more precise nature of which we do not know, as a result of the investigations of Rutherford, Bohr, Heisenberg, De Broglie, and Schrödinger. The one fact that stands out is that these newly-discovered elements, out of which matter is constructed, whatever they may be ultimately, appear to display an indeterminateness which is quite hostile to the old determinism of physics. Thus the electrons of which, according to Rutherford and Bohr, the atom is composed do not revolve about their nucleus in a completely regular manner but have a way of shooting suddenly from one orbit to another. As Bertrand Russell puts it, they seem to jump like a flea. But no one has yet discovered whether the jumpings of the flea are to be explained on the basis of mechanical law or are to be attributed to sheer natural flea-born caprice. In any case, the tendency to-day in Physics is away from the rigidly deterministic conception of the Universe; and it is strange to witness some of our most distinguished scientists like Whitehead, Eddington, and Jeans turning into speculative philosophers and proclaiming the spiritual government of the Universe. These thinkers have, in fact, seen a new light, confessed their sins and reaffirmed their faith in the God which the scientists of the eighteenth century either discarded altogether or banished beyond the outer confines of the material world.

The conversion of the scientists has, unfortunately, come too late. For Speculative Philosophy has, true to form, moved on in advance. It now declares that the Naturalistic-Spiritualistic controversy is out-worn and a thing of the past. For, in the light of recent scientific investigations and philosophical speculations, neither matter nor spirit, in the old

sense, can be regarded as the ultimate background of the Universe. They are, in fact, both evolved out of a more fundamental reality than either. This theory was suggested by James in his *Essays on Radical Empiricism*, published in 1912. In that work James proclaimed that the original stuff out of which the universe is composed is *Pure Experience*, by which he means something which is neither mind nor matter, but the original source of both. Though it is, perhaps, more of the nature of mind than of matter, it becomes matter in the same way that it becomes mind, namely, through different arrangements or configurations of its elements, whatever they may be. Bertrand Russell has named these original elements of the primordial substance "neutral particulars". These are just the space-time points or "events" of the Relativity Theory, and Russell affirms that out of them the whole world of matter and mind may be constructed with the aid of logical principles, which are even more fundamental than the laws of mathematics:

James came to philosophy through psychology and the whole of his thinking has been dominated by the interests and methods of psychology. Bertrand Russell, though originally a mathematician, came to the conclusion that logic was the most fundamental of all the scientific approaches to truth. But there are the mathematicians, the natural scientists, the social scientists, the philosophers and the modern theologians who are quite sincere in believing that they have special fields of investigation and special methods which cannot be reduced to the simplicity of one fundamental science. Besides, there are the approaches through literature and art which provide their own special vistas in the search for truth. An attempt to do justice to all these different interests and to reveal their development and interrelation has been made in a treatise entitled *Space, Time, and Deity* published in 1920 by Professor S. Alexander of Manchester, England. This is perhaps one of the most comprehensive speculative systems of recent years and is, without doubt, destined to become a classic.

Alexander's theory may be briefly stated. The universe is ultimately a continuum of Space-Time points or events, in which time is the dynamic principle related to space as mind is to body. This Space-Time continuum is in its essence motion and is in the continuous process of evolution to ever higher qualitative levels. Out of Space-Time is first evolved the electron, which is the simplest element which Science knows, at least up to date. Electrons form into atoms, atoms into molecules, and in this way the whole material world comes into existence. Out of and beyond the material world, new configurations of Space-Time evolve giving rise to life which is a new qualitative level of being. Next follow in the process of evolution consciousness and self-consciousness. These represent qualitative levels constituted by the greater complexity of their particular configurations, the special quality of self-consciousness being spirit. It will thus be obvious that spirit does not come at the beginning of things, as in accordance with the Idealistic philosophy. It is the result of a long process of evolution and, although matter antedates spirit in the evolutionary process, it also has no claim to be the ultimate stuff of things, since it is itself a product of evolution. It will be noted further that, though motion may be said to be the ultimate stuff of reality, this is not motion in the purely mechanical sense of that term but motion conceived as harbouring in itself that creative power which is the essence of Bergson's *élan vital*. If it is not spirit, it has the potency of becoming spirit in the course of its development. But having attained this level, the evolutionary process has by no means reached its final end. It is true that the spiritual qualities of man as they are revealed in Science, Literature, Art, Philosophy, Morals, and Religion, are the highest qualities which have yet come into being, but the universe is probably as yet but in its infancy. There lie in it infinite possibilities of the emergence of still higher qualitative levels, each new level being related to the one immediately preceding it as life is related to matter; or consciousness to

life. The new level which is always in the process of emergence Alexander calls "Deity". The nature of deity can never be predicted since it is a spontaneous outgrowth out of the whole of the past. All we know is that the greater complexity involved in the new configurations which give it its special quality guarantee that that quality will be of a higher order than that of the level which is superseded. Deity, then, is the newer, fuller and richer order of things toward which the universe is ever striving in the totality of its development; and God is the whole universe specially characterised by the urge or *nisus* toward deity manifested in the time-process. In this continuous emergence of even higher qualities and values, God finds expression for the potentialities of His own inner life. In that life man is privileged to participate in the development of those spiritual values which belong to the qualitative level of self-consciousness. In this sphere one might say he is an inspired co-worker with God in the ascent to deity. Religion is, in fact, just that inner feeling of our oneness with God in that eternal urge which ever makes for higher things. God is thus not merely, in the sense of Matthew Arnold, the power not ourselves which makes for righteousness, but the power within as well as without ourselves which makes for deity, which is something higher than righteousness. Deity is the ever higher evolving goal of God's activity.

In this outline of Alexander's theory, it will be noticed that each qualitative level of reality will have its own special sciences, and that the sciences of one level, however much they may lean on the sciences of the preceding levels, cannot be reduced to them. Thus the Biological Sciences which attempt to explore the level of life cannot be reduced to the Physical and Chemical Sciences which have to do with the material world; nor can Psychology and the other Social Sciences, however much they may make use of the truths formulated by the Biological Sciences, be reduced to those sciences. It is also to be noted that, as the conceptions of God

and Deity form the coping-stones of this metaphysical system, and as religion is accorded its own particular reality in the realm of spiritual values, Theology is restored to something of the old place of honour which it originally enjoyed among the pursuits of knowledge. This changed attitude to Theology has been very pronounced during the past twenty-five years, and I believe that no one who has followed and learned to appreciate the excellent work which has been carried along such lines as Biblical Criticism, Comparative Religion, the Philosophy of Religion and Neo-Scholastic Philosophy will grudge to the new methods and outlook of Theology an important place among the intellectual disciplines.

I have finished the story which I have been invited to tell, and I sincerely hope that, however much I have failed to do justice to the various philosophies discussed, I have, at least, not misrepresented them or failed to present to you their essential features. And now I must make the rather sad confession that, out of the wealth of the speculative tendencies of the immediate past, I find it impossible to extract the promise of anything like a clear-cut solution of the problems which to-day so deeply agitate our civilisation. Yet I believe that meditation upon some of the main ideas which I have outlined may enable us to catch a sense of some dim melodies floating on the wings of time, and breathing out a promise, faint but fair to contemplate, that in the birth and growth of things of deeper truth and worth, they will swell into a new world symphony that will rise above the noisy clash of narrow material interests and the loud beatings of pretentious drums, and open up the soul of man to a god-like sense of understanding that will see the interests of all men as one and heal the ills that now infect his little world and mar the vision of a larger life. But time will permit only of a few remarks.

I would first of all remark that each of these speculative theories I have endeavoured to present to you is an attempt

at a world-portrait sketched first with as much scientific accuracy as possible and filled in with elements drawn from experience selected and arranged in the proper perspective by the creative imagination. Since, however, science is growing at an ever-accelerating rate and the human imagination is never at rest, no speculative portrait can possibly be final. The main thing in speculative philosophy is to make sure that the imaginative content is drawn from experience as a whole, and, it is scarcely necessary to add, experience at its best. For it is reasonable to suppose that our higher aspirations are more likely to be in tune with the real nature of the universe than our changing moods and those narrower interests which too often mar our philosophic outlook.

But even granted that speculative philosophers may give us as faithful an interpretation of life as is humanly possible, it is still impossible to expect anything like complete uniformity. This is just because no two individuals, however sensitive to the inner meaning of things, can see life in exactly the same perspective. Some aspects, however, will be more or less common and these will stand out in greater relief. I shall endeavour to deal briefly with one tendency which seems to dominate in recent developments.

It must be obvious that the most recent developments have given to the intellect a more subordinate place in the whole context of life than it formerly tended to occupy in philosophical speculation. The intellect, in fact, can no longer assume the only, or even the chief, rôle in the great drama in which truth is crowned as king. It must take its place among the other dominating impulses in the forward flow of life. Pure intellect, so-called, which attempts to run its own course apart, is apt to draw us into those dogmatic backwashes which tend to dam the rhythmic flow of truth, and too often it emits a shallow and poisonous type of cynicism that casts its blighting breath upon the fresh and fragrant flowers that bloom in the verdant meadows all along the stream. The world affords many avenues to truth, and perhaps those

truths that flow into the contemplative mind from the golden sunset on the broad undulating prairie, from the sublime majesty of the mountain peaks, from the wide expanse of the open sea, or from the boundless glory of the starry heavens may be more potent to open up the mind to the higher visions of truth than the cold formulae of the detached intellect. And the same may be said in regard to the contemplation of the great issues of life itself when the finer sentiments are allowed free and full power of expression. It was, in fact, something of this feeling which inspired Kant, that intellectual giant of the eighteenth century, to exclaim:

Two things fill the mind with ever new and increasing admiration and awe, the oftener and the more steadily we reflect on them: *the starry heavens above and the moral law within.*

In an age in which the intellectual life has to such a large extent been dominated by the interest in the Natural Sciences, and in which human progress has usually been measured in terms of the material prosperity made possible by scientific discoveries, we are apt to forget that there are powers in the universe which are more significant than the forces of nature. These are the powers which lie within the human mind; and it is just because these powers rise above the forces of nature, to control them or to defy them, that Kant maintained that they are the true source of the feeling of the sublime. As yet the realm of mental realities, in comparison with the world of nature, remains but inadequately explored and inadequately understood, and for this reason it has not been sufficiently organised to give direction and depth to the stream of human life. So it is that, even at a time of such magnificent developments in the field of Natural Science, such as we have witnessed in the last quarter of a century, it would appear that the stream of life has been running shallow and uncontrolled; and that is why, perhaps, we seem at present to be floating so perilously close to the rocks. At a time very similar to our own when great scientific advances

were accompanied by a narrow materialistic utilitarianism, a shallow intellectualism and a superficial optimism, the great philosopher-preacher Joseph Butler was led to affirm:

Our province is virtue and religion, life and manners: the science of improving the temper, and making the heart better. This is the field assigned us to cultivate. . . . He who should find out one rule to assist us in this work, would deserve infinitely better of mankind, than all the improvers of other knowledge put together.¹

In concluding this series of lectures commemorating the twenty-fifth anniversary of the founding of this university, I would like to reaffirm the sentiment contained in the words of Joseph Butler. In doing so, I do not in any way wish to underestimate the great value of scientific knowledge or of the intellectual attitude generally. I could hope, on the contrary, that the methods of scientific research might be extended and applied to a more intensive study of the pressing social problems of our day. My purpose is rather to repeat what I have already indicated—that if our speculative philosophies are to be genuine world-portraits, they must embody in themselves an outlook which is broad enough and deep enough to do justice to life as a whole. A narrow intellectualism is quite as intolerable as a shallow sentimentalism, and it ought to be possible to cultivate a philosophical attitude to life which will do justice at once to the best fruits of knowledge, and to the finer sentiments which flow out of a genuine enthusiasm for the welfare of mankind. Only that deeper understanding which is born of knowledge and of love will enable us to penetrate the inner secrets of life, to illuminate its true spiritual values and to give direction in the world of practical affairs. This is the spirit which I hope will become firmly embedded in the foundational traditions of this University.

¹ *Sermon xv, sect. 16.*